1978

A Comparative Study of Two Approaches to Teaching Low-Achieving Students at the College Level.

James Allen Caillier
Louisiana State University and Agricultural & Mechanical College

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A COMPARATIVE STUDY OF TWO APPROACHES TO TEACHING LOW-ACHIEVING STUDENTS AT THE COLLEGE LEVEL.

THE LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COL., ED.D., 1978
A COMPARATIVE STUDY OF TWO APPROACHES TO TEACHING
LOW-ACHIEVING STUDENTS AT THE COLLEGE LEVEL

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Education

in

The Department of Education

by

James Allen Caillier
B.S., University of Southwestern Louisiana, 1964
M.S., Southern University, 1968
May, 1978
ACKNOWLEDGMENTS

The author wishes to express gratitude to the many people who contributed to this study. Special appreciation is extended to his major professor, Dr. Richard Musemeche, for his advice and support. Additional appreciation goes to the members of the author's doctoral committee: Dr. C. Robert Blackmon, Dr. J. Berton Gremillion, Dr. Eugene C. McCann, and Dr. Robert C. Von Brock.

Finally, love, affection, and the deepest appreciation go to the author's family whose sacrifices for the sake of this study are beyond measure.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACKNOWLEDGMENTS</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>LIST OF TABLES</td>
<td>v</td>
</tr>
<tr>
<td></td>
<td>ABSTRACT</td>
<td>vii</td>
</tr>
<tr>
<td>Chapter</td>
<td>THE PROBLEM</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>STATEMENT OF THE PROBLEM</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PROCEDURES</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>DEFINITION OF TERMS</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>DELIMITATION OF THE STUDY</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>IMPORTANCE OF THE STUDY</td>
<td>8</td>
</tr>
<tr>
<td>Chapter</td>
<td>REVIEW OF THE RELATED LITERATURE</td>
<td>12</td>
</tr>
<tr>
<td>Chapter</td>
<td>SOURCES OF DATA AND TREATMENT OF DATA</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>SOURCES OF DATA</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>TREATMENT OF DATA</td>
<td>27</td>
</tr>
<tr>
<td>Chapter</td>
<td>PRESENTATION AND ANALYSIS OF DATA</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>GRADES EARNED</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>SEMESTER GRADE POINT AVERAGE</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>CUMULATIVE GRADE POINT AVERAGE</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>RETENTION RATE</td>
<td>52</td>
</tr>
<tr>
<td>Chapter</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>SUMMARY</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>CONCLUSIONS</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>RECOMMENDATIONS</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>SELECTED BIBLIOGRAPHY</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>VITA</td>
<td>66</td>
<td></td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table | Page
1. Distribution of Grades of Students in Group A and Group B Enrolled in English 90 | 33
2. Distribution of Grades of Students in Group A and Group B Enrolled in Mathematics 90 | 34
3. Distribution of Grades of Students in Group A and Group B Enrolled in English 101 | 35
4. Distribution of Grades of Students in Group A and Group B Enrolled in Mathematics 101 | 36
5. Distribution of Mean Semester Grade Point Average of Students in Group A and Group B after One, Two, Three, and Four Semesters | 38
6. Distribution of Mean Grade Point Average of Students in Group A and Group B after the First Semester (Fall, 1974) | 39
7. Distribution of Mean Grade Point Average of Students in Group A and Group B after the Second Semester (Spring, 1975) | 40
8. Distribution of Mean Grade Point Average of Students in Group A and Group B after the Third Semester (Fall, 1975) | 41
9. Distribution of Mean Grade Point Average of Students in Group A and Group B after the Fourth Semester (Spring, 1976) | 41
10. Distribution of Mean Cumulative Grade Point Average of Students in Group A and Group B after Two, Three, and Four Semesters | 43
11. Distribution of Mean Cumulative Grade Point Average of Students in Group A and Group B after Two Semesters (Fall, 1974 Through Spring, 1975) | 44
<table>
<thead>
<tr>
<th>Table</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Distribution of Mean Cumulative Grade Point Average of Students in Group A and Group B after Three Semesters (Fall, 1974 Through Fall, 1975).</td>
<td>45</td>
</tr>
<tr>
<td>13. Distribution of Mean Cumulative Grade Point Average of Students in Group A and Group B after Four Semesters (Fall, 1974 Through Spring, 1976).</td>
<td>46</td>
</tr>
<tr>
<td>14. Distribution of Mean Semester Grade Point Average of Students in Group A, Group B, and Group C after One, Two, Three, and Four Semesters (Fall, 1974 Through Spring, 1976).</td>
<td>47</td>
</tr>
<tr>
<td>15. Distribution of Mean Difference in Semester Grade Point Average Between Group A and Group B after One, Two, Three, and Four Semesters.</td>
<td>48</td>
</tr>
<tr>
<td>16. Distribution of Mean Difference in Semester Grade Point Average Between Group B and Group C after One, Two, Three, and Four Semesters.</td>
<td>49</td>
</tr>
<tr>
<td>17. Distribution of Mean Cumulative Grade Point Average Among Group A, Group B, and Group C after Two, Three, and Four Semesters (Fall, 1974 Through Spring, 1976).</td>
<td>50</td>
</tr>
<tr>
<td>18. Distribution of Mean Cumulative Grade Point Average Between Group A and Group C after Two, Three, and Four Semesters.</td>
<td>51</td>
</tr>
<tr>
<td>19. Distribution of Mean Cumulative Grade Point Average Between Group B and Group C after Two, Three, and Four Semesters.</td>
<td>52</td>
</tr>
<tr>
<td>20. Distribution of the Number and Percentage of Students Remaining in School from 1974 through 1976.</td>
<td>53</td>
</tr>
</tbody>
</table>
ABSTRACT

The purpose of this study was to compare two approaches to teaching low-achieving students at the University of Southwestern Louisiana. Specifically, the goal was to determine whether or not significant differences with respect to academic success and attrition occur among students receiving remedial assistance. In addition, an attempt was made to determine whether significant differences with respect to academic success occur among students receiving regular remedial assistance (Remedial English and Remedial Mathematics), students receiving a special "Core" program (Remedial English, Remedial Mathematics, Remedial Reading, Remedial Speech), and students receiving no remedial assistance after one, two, three, and four semesters in college.

The remedial students who enrolled in the Fall of 1974 were divided into two groups, A and B. Group A consisted of 45 students who were enrolled in Mathematics 90, English 90, Reading 90, and Speech 90 on the basis of American College Test scores. Group B consisted of 50 students who were required to enroll in only English 90 and Mathematics 90 on the basis of American College Test scores. Group C consisted of 50
students who received no remedial treatment and who were enrolled in College Algebra 101 and English 101 on the basis of American College Test scores. Thus, the students studied consisted of three distinct and statistically identifiable groups.

To further accomplish the purpose of this study, grades earned by all three groups were compared. The data were analyzed by t-test and covariance, with retention rate also being subjected to an analysis of variance. The .05 level of significance was established for testing the null hypothesis.

The following conclusions were drawn on the basis of the findings of this study:

1. The expectation for academic success in remedial courses is greater at the University of Southwestern Louisiana for students in the structured remedial program (Group A) than for students in the non-structured remedial program (Group B).

2. The expectation for academic success after one and two semesters is greater for students in the structured remedial program than for students in the non-structured remedial program.

3. The expectation for academic success for the remedial students after three and four semesters is approximately the same. However, the retention is much higher for the students in the structured program.

4. Students in the non-remedial program showed superior grade achievement after one, two, three, and four semesters to that of the students taking the remedial programs. However, students in the structured remedial program followed essentially the same retention pattern as did students in the non-remedial program.
5. Students in the structured remedial program tend to show greater achievement than students in the non-structured remedial program.

6. Students in the structured remedial program tend to have greater retention rate than students in the non-structured remedial program.

7. A structured remedial program seems to be more effective than a non-structured remedial program.
Chapter 1

THE PROBLEM

INTRODUCTION

A number of universities are facing the problem of admitting unprepared students and having no vital educational alternatives for them. This is often done through the open-door admission policy. "Open-door" means more than permitting every student with a high school diploma an opportunity to go to college. It also means that the student, regardless of his level of achievement, will receive the best education possible in the college commensurate with his needs, efforts, motivation, and abilities (Moore, 1970). In reality, however, most universities continue to develop the traditional programs and curricula which assume certain achievement, ability, and motivation levels.

Evidence from research studies indicate that the number of high risk students entering our universities is on the increase. There is also evidence to indicate that these students will not achieve success without special assistance. Such assistance often comes in terms of remedial courses.

The University of Southwestern Louisiana (USL) is no different from any other university which attracts
a large number of low-achieving students because of an open-door admission policy; therefore, like many universities, it was forced to develop remedial courses in order to attempt to prepare low-achieving students for regular college courses.

In 1960 a remedial English course called English 90 was developed for those students who were not prepared for English 101: Composition and Rhetoric. Also, because of the large number of students who were having difficulty with College Algebra (Mathematics 101), a remedial mathematics course called Mathematics 90 was designed to prepare low-achieving students for college level work in this discipline. Since 1960 the remedial courses in mathematics and English have undergone constant revision in an attempt to prepare the low-achieving students for the regular mathematics and English courses.

In 1974 a "Core" program was designed by the author and Dr. Barbara Cicardo based on the needs and backgrounds of the low-achieving students. It consisted of a block of courses: Mathematics 90, English 90, Reading 90, and Speech 90. All of these courses carried credit but did not apply toward meeting graduation requirements. Remedial students were required to take these courses during their first semester at USL. These students were also allowed to schedule additional
courses to complete their individual course load. In addition to the "Core" courses these students received tutorial assistance and counseling on a regular basis.

The objectives of the core program were:

1. To allow the students to concentrate on eliminating their deficiencies,
2. To allow a semester for the low-achieving students to become acclimated before enrolling in the regular courses,
3. To provide supportive services in terms of counseling and tutoring on a need basis, and
4. To maximize the students' chances for success in college.

The purpose of this study was to evaluate the effectiveness of the remedial assistance offered to low-achieving students at USL. To further develop the study, a comparison was made of the students who participated in the "Core" project and the students who scheduled regular Mathematics 90 and English 90.
STATEMENT OF THE PROBLEM

The problems of this study were:

1. To determine if there were any significant differences with respect to grade achievement in mathematics and English, semester grade point averages, and retention rate for low-achieving college students (selection was based on American College Test scores) among three groups:

   a. Group A students took a one semester "Core Program" consisting of English 90, Mathematics 90, Reading 90, and Speech 90; and they received counseling and tutoring.

   b. Group B students took Mathematics 90 and English 90 for one semester.

   c. Group C students took Mathematics 101 and English 101. They received no remedial help.

2. To determine if there were any significant differences with respect to grade achievement in mathematics and English, semester and cumulative grade point averages, and retention rate after two, three, and four semesters between Groups A and B.
3. To determine if there were any significant differences in semester and cumulative grade point averages and retention rate after one, two, three, and four semesters among Groups A, B, and C (students who received no remedial courses and who took Mathematics 101 and English 101).

PROCEDURES

The procedures used in this study were as follows:

1. A $t$ test at the .05 level of confidence was used in an attempt to determine whether there were any significant differences with respect to grade achievement in Mathematics 90 and English 90 courses between students in Group A and students in Group B.

2. A $t$ test was used at the .05 level of confidence in an attempt to determine whether there were any significant differences with respect to grade achievement in Mathematics 101 and English 101 between students in Group A and students in Group B.

3. A $t$ test was used at the .05 level of confidence in an attempt to determine whether there were any significant differences with respect to semester and cumulative grade point averages after one, two, three, and four semesters in college between students in Group A and students in Group B.
4. An analysis of covariance was used in an attempt to determine whether there were any significant differences with respect to semester and cumulative grade point averages after one, two, three, and four semesters in college among students in Groups A, B, and C.

5. A percentage analysis was used to compare the retention rate in college after one, two, three, and four semesters among students in Groups A, B, and C.

DEFINITION OF TERMS

**Core Program** means a semester of remedial work consisting of English 90, Mathematics 90, Reading 90, and Speech 90, with counseling and tutoring on a need basis.

**Remedial treatment** means the remedial instruction offered at the University of Southwestern Louisiana for those students entering college and considered unable to complete successfully a freshman mathematics or English course because of limited high school background (selection was based on ACT scores in mathematics and/or English).

**Student retention rate** means the percentage of students who are still enrolled in college at the end of a specified period of time.
Student success means that a student has achieved a grade of D or better upon completion of the course(s) involved.

DELIMITATION OF THE STUDY

This study was limited to specific groups of students at the University of Southwestern Louisiana identified on the basis of the following criteria:

1. Group A, those who took a "Core Program"—Mathematics 90, English 90, Speech 90, and Reading 90—in the Fall Semester of 1974; and

2. Group B, those who were required to take a remedial mathematics (90) course and a remedial English (90) course, on the basis of their American College Test scores in mathematics and English; and

3. Group C, those who scheduled Mathematics 101 and English 101 because their ACT scores indicated regular college level courses.

The "remedial treatment" offered two alternatives:

1. Taking one course in Mathematics 90 and one course in English 90 prior to enrolling in the regular college Mathematics 101 and the regular college English 101 courses, and

2. Taking a "Core Program"—one semester of Mathematics 90, English 90, Speech 90, and Reading 90 prior to taking Mathematics 101 and English 101.
Students who were enrolled for the first time at the University of Southwestern Louisiana in the Fall Semester of 1974 were included in this study. Three groups of students were studied for four semesters (Fall 1974 through Spring 1976). Group A consisted of 45 remedial students who enrolled in the "Core Program", Group B consisted of 50 remedial students selected at random who scheduled Mathematics 90 and English 90, and Group C consisted of 50 students selected at random who received no remedial treatment and who scheduled Mathematics 101 and English 101 courses.

**IMPORTANCE OF THE STUDY**

National, regional, and state surveys have been made in recent years to ascertain the types of programs, the number of students enrolled in them, and the nature of the services provided for non-traditional students; however, the scarcity of research directed toward evaluating remedial programs indicates the need for this study.

Surveys taken at USL show that, although the number of students enrolled in remedial English and remedial mathematics has increased steadily since 1960, no one has taken to date the initiative to evaluate these remedial programs.
Bednar and Weinberg (1970) found programs which improved student academic performance to be characterized as:

1) structured rather than unstructured, 2) lengthy rather than brief, 3) organized with individualized and/or group counseling aimed at the dynamics of under achievement in conjunction with an academic studies program, 4) oriented toward high levels of empathy, warmth and genuineness, and 5) appropriate to the needs of the students.

Structured academic programs were found most effective for dependent students, while independent students functioned best in less structured atmospheres. The author suggests that "an academic studies program alone is ineffective but, when used as an adjunct to either group or individual counseling, it is associated with improved Grade Point Averages" (Bednar and Weinberg, 1970, 6).

Other reports (Brown, 1960, and Farquhar, 1960) support some of the findings above and further indicate that intellectual measurements alone will not permit successful prediction of academic performance. From the above studies, it is quite obvious that additional studies are needed.

Whenever remedial assistance is offered to low-achieving students, it must be effective or it must be eliminated (Rummel, 1976). The only way to determine
whether a remedial program or a remedial course is accomplishing the established objectives is through evaluation. Remedial programs are expensive and often frustrating to both faculty and students.

Remedial programs often go without evaluation because of the fear of the outcome. If remedial courses or programs are found to be ineffective, then one of two options should be exercised: 1) make necessary changes and modifications followed by constant evaluation, or 2) eliminate the ineffective courses or programs (Roueche and Kirk, 1974).

An extensive study of remedial programs designed by Roueche and Kirk (1974) concluded that colleges can design and implement successful programs for non-traditional, high-risk students. The authors also concluded that other programs are enhanced and enriched as a result of successful developmental programs.

Because enrollments in higher education are leveling off or declining, probably some colleges will be admitting students they refused to consider only a few years ago. In order to provide appropriate educational programs to meet the needs of these students, remedial courses and programs must be designed.

The importance of this study rests upon its evaluation of the remedial work offered in mathematics,
English, speech, and reading at the University of Southwestern Louisiana for the purpose of improving the effectiveness of those programs.
Chapter 2

REVIEW OF THE RELATED LITERATURE

Many colleges and universities have not been particularly concerned with assistance provided to low achievers until the late 1960's. There has been some remedial assistance offered in public universities in some basic courses such as English and mathematics, but most innovative programs especially designed for high-risk students have been incorporated into existing curricula only since the late 1960's. Between 1967-1975 many colleges and universities started offering specially designed programs for the low-achieving students in junior and community college systems.

Remedial programs often go without evaluation because of the fear of the outcome (Roueche and Kirk, 1974). If remedial courses or programs are found to be ineffective, then one of two options are indicated: 1) make necessary changes and modifications followed by constant evaluation, or 2) eliminate the ineffective course or programs.

The evidence indicates (Rouche, 1968) that the number of high-risk students entering our universities is on the increase. There is also evidence to indicate that these students will not achieve success without
special assistance. This assistance often comes in terms of remedial courses or remedial programs.

National surveys show that American College Test (ACT) scores have steadily declined during the last ten years (King, 1976). Yet, there are no hard data to explain this decline. Several local, state, and national groups are researching this phenomenon. The ACT scores do not measure a student's intelligence or his ability to learn. However, they are reliable predictors of success in college. The scores are used as a guide in determining need and placement of students in remedial courses (Elliott, 1977).

In a study at Kansas State University, Foster and Danskin (1965) found that the American College Test scores effectively predicted academic performance of first semester freshmen during 1961 and 1962. When high school rank was combined with American College Test scores, the predictions were generally more accurate than were those based on American College Test scores alone. They also concluded that results for women were more predictable than those for men. Similar studies were conducted by Borup (1971) and Munday (1968) with similar results.

According to Bassone (1966) and Astin (1971), colleges can no longer afford simply to be custodians
of students in an educational system based solely on expediency; i.e., counting bodies for the sake of obtaining a greater budget. Programs should be developed for these students.

After an extensive study, Gordon and Wilkerson (1966) stated that the somewhat dreary pattern of remedial courses has plagued many generations of low-achieving students with but little benefit. Ludwig and Gold (1969) reveal that only 37 percent of remedial students at Los Angeles City College achieved a grade average of "C" or above for the first semester in regular courses. Only 34 percent ever completed two years of study in college.

In a study of developmental students who matriculated over a three-year period at Harrisburg, Pennsylvania, Area Community College, Snyder and Blocker (1970) learned that between 33 and 40 percent of the students did not return for a second year's work. Less than one-fourth of the students achieved at least a "C" average for the cumulative period of attendance, and only 27 percent earned the associate degree.

In a comprehensive review by Kendrick and Thomas (1970), it was observed that research on the extensiveness and effectiveness of compensatory
programs and practices has been limited in quantity and scope. Yet, even with the paucity of evaluative studies, it is safe to note that evidence points to the conclusion that the existing compensatory programs and practices have made little impact in eradicating the problems of disadvantaged college students, nor have the majority of colleges accepted this area as their role.

The basic assumption inherent in establishing remedial courses is that the students' chances for academic success in college are greatly enhanced by having such programs available for low achievers. Yet, as Schenz (1963), Berg and Axtel (1968), Bassone (1966), Moore (1970), Roueche (1968), Gordon and Jablonsky (1967), Blocker and others (1965) point out, little hard evidence exists to support the contention that these programs do indeed help the students remove or remedy their deficiencies.

After a thorough review of literature, Roueche and Kirk (1974) found few research studies containing hard data pertaining to the persistence, academic achievement, or attitude development of students in remedial programs. In short, too few studies have been conducted.

Since the publication of the first national study of the effectiveness of remedial education
programs in community junior colleges (Roueche, 1968), notable changes have occurred in two-year remedial programs (Roueche and Kirk, 1974). These changes include assigning the experienced faculty members to teach these non-traditional students, developing individualized instructional materials and strategies to accommodate the students better, non-punitive grading, tutors, and peer counseling. These changes are impressive and obviously were made in efforts to improve program effectiveness.

After two years of research, Roueche and Kirk (1974) found through evaluation of several community college remedial programs that the new programs are highly successful. They showed that open-door colleges not only can, but in a few cases actually are bringing "new" students into the mainstream of higher education. A longitudinal study carried out at the University of Georgia (Harris, 1970) suggests that students who were making D's or F's might, in actuality, have been learning as much or more than students who were making higher grades. Rossman, and others (1975) found that one major concern in the implementation of open-admission was the need to develop methods to assist underprepared students when they first encounter college-level courses.
One developmental study by Roueche and Kirk (1974) included four junior colleges located in New Jersey, Texas, and North Carolina. These four schools had innovative programs for the disadvantaged. Roueche and Kirk designed their study to answer four basic questions: (1) To what extent did students in remedial programs persist in the community college? (2) At what level did students in remedial programs perform academically? (3) Was academic performance of students in remedial programs superior to that of comparable students in non-remedial programs? and (4) Were students in remedial programs more persistent, as measured by completion of full-time enrollment in subsequent semesters, than comparable students enrolled in non-remedial programs?

The one finding that stands out was that while some progress was noted relative to low-ability students in the remedial programs, there was marked reduction in achievement levels of these students once they began doing regular college level work. All four of the colleges used in this study reported that many students could not accomplish the regular college work even after experiencing several semesters of remediation.

It is worth noting that the objectives of the remedial programs were essentially the same in all of these schools. Some of the stated objectives were: (1) to assist the student in developing group relation-
ships within the college community; (2) to assist
the student in becoming aware of his community, its
problems, and resources; (3) to assist the student in
solving financial problems while he is attending school;
(4) to increase the student's chances for success in
academic work; (5) to provide a curriculum which is
different from high school work; (6) to assist the student
in developing basic communication skills as well as
problem solving skills; and (7) to assist the student in
developing a more positive and realistic self-concept.

In their study, Roueche and Kirk concluded
that many of the objectives were accomplished while the
students were in the remedial program. However,
trouble arose when the students were placed in com­
petitive college courses. The researchers also con­
cluded that evaluation of remedial programs should be
a continuous process.

In extensive research, Bednar and Weinberg
(1970) found programs which improve student academic
performance to be characterized as highly structured for
low-achieving students. The structured programs provide
for constant reinforcement.

In 1976 Cross surveyed all community colleges
and found some kind of special services program for the
disadvantaged in 93 percent of the schools. In a later
survey by Roueche and Snow (1977) of all public higher
education it was revealed that 86 percent of today's colleges are providing some special service for the academically disadvantaged. Specifically, 95 percent of the community colleges and 77 percent of the senior colleges are providing a special service such as tutoring, counseling, remedial courses, and/or financial aid.

An assortment of programs have been initiated to provide the special services. Often these programs are poorly coordinated, added to the responsibilities of existent personnel, funded by federal dollars, and low on the institutional priority list (Davis and others, 1971). However, they too are on the increase. In 1977 Roueche and Snow found that the existence of a "program" is not sufficient to assure student performance or success. Programs, like marriages, can be for better or worse.

Kirk and Snow (1977) found developmental/remedial programs to be essentially supportive of the institution's primary objectives rather than being an end in themselves. Furthermore, they are insufficient by themselves to achieve this supportive function. Although remedial programs have increased, there is very little evidence to measure their impact (Roueche, 1968). However, the increasing attention by the public and by professionals demanding accountability from all schools and colleges is on the increase. As a result, evaluation efforts are being designed and implemented. Roueche and Snow's
recent study (1977) suggests that the outlook for evaluation looks promising, even progressive. This is due primarily to the fact that remedial programs are expensive and often criticized by faculty and students.

Although the trend speaks strongly that evaluation is on the upswing, the evaluative reports are often inconsistent because diverse and conflicting criteria are being utilized in the judgment of results. As a result, most evaluations have been sharply criticized (Roueche and Snow, 1977).

After reviewing some 35 studies spanning a 40 year period, Summerskills (1962) concluded that on the average 50 percent of matriculating college students withdrew during the normal four-year period. Summerskills concluded that a majority of withdrawals from college are directly traceable to academic difficulties.

In a study of college students, Cohig (1963) and Chase (1968) found that student withdrawal rate from college was much higher for students with poor high school preparation or low scholastic aptitude. According to Meister and Trauber (1965), very little systematic research has been conducted to determine whether improved retention rates for disadvantaged students is a result of innovative, compensatory, or other programs.
According to Austin (1964), in a study of the dropout rate among freshmen students, college students who dropped out tended to be more irresponsible and dependent than students who remained in college and persisted until they obtained their degrees. Bassone (1966) and Losak (1969), found students who enrolled in remedial courses did not perform any better in college than did those who did not take remedial courses. Losak (1969) conducted a study at a large junior college in Florida and he found that remedial English offered to low-ability students did not raise their achievement in subsequent regular English courses, nor did it produce fewer withdrawals.

In their books on the junior college literature since 1960, Clark (1960), Medsker (1960), and Thornton (1966) did not specify the distinguishing characteristics of the academically unsuccessful student. It follows that they have not suggested a curriculum for low achievers. There is nothing found in teacher training techniques designed to teach college instructors how to teach high-risk students.

In a study of the underprepared, disadvantaged students, Schiavone (1973) points out that further research is needed to understand the problems of these students. Models must be developed to insure the effectiveness of remediation, and evaluation should be built into the total remedial effort.
In an attempt to obtain information on remedial programs, Egerton (1968) sent out over 190 questionnaires to institutions of higher education. He concluded that less than 11-1/2 percent of the 162 institutions responding to his survey were initiating remedial programs of a substantial nature. He also observed that the major debate often centered on whether institutions of higher education should engage in activities for the disadvantaged rather than on how to proceed with this challenge.

In conclusion, a review of the related literature reveals that there is no clear answer about the effects or possible effects of remediation on low-achieving students at the college level. On the effectiveness of remediation efforts in colleges, there are many unanswered questions and a lack of research in terms of assessing academic performance, persistence, and attitudes of high-risk students (Roueche and Kirk, 1974). There is also evidence from the few studies available indicating that remedial courses and programs in two-year and four-year colleges have largely been ineffective in remedying student deficiencies.

Evaluation of the remedial courses and programs is essential. Through evaluation, institutions of higher education will have the much needed data to make course or program changes and modifications or to eliminate ineffective courses and programs.
Most programs for non-traditional students are recent developments; and, hence, little evaluative data exist on their effectiveness. Despite the scarcity and apparent conflict in existing data, the present trend is to admit more low-achieving students into higher education and to develop more remedial programs.
Chapter 3

SOURCES OF DATA AND TREATMENT OF DATA

In the Fall, 1974, the University of Southwestern Louisiana initiated a Core Program in English, mathematics, reading, and speech (plus one outside course) for a group of students with low ACT scores. The program provided for: (1) integrating subject matter and reinforcing learning in laboratory sessions; (2) increasing motivation by individual attention to the problems of the disadvantaged learner; and (3) providing realistic vocational counseling for continuing students and those who would pursue non-academic careers. Aside from the fact that these courses (English, mathematics, reading, and speech) are basic to any curriculum, they are organized by the teachers of the core sections to correlate and reinforce material and methods of learning; e.g., the reading class used the material from the English class as its basic work task. The purpose of this arrangement was to remove the reading barrier and to better accomplish the objectives in the English class.

The students in the Core Program were selected at random from entering college freshmen.
with composite ACT scores ranging from 5 - 15. According to national reading and verbal skills objectives, these represent the largest range of remedial students and those most susceptible to academic failure. Conversely they also represent the greatest challenge and possibility for academic success given the program suited to their particular educational disabilities.

The students in the Core Program were divided into two sections. The class size was 23 and students were then registered in English, mathematics, speech, and reading. Prior to the beginning of the semester, the teachers selected to participate in the Core Program met in a series of seminars to submit and compare syllabi and to plan integrated activities of both method and material across the four major courses. There were also meetings within the disciplines (coordination between the English teachers, etc.) as well as a weekly seminar to discuss the progress of the group and to present any problem areas for possible group solution. Each section also had a laboratory assistant, preferably a senior or graduate student of that discipline who sat in on the class and who conducted a one-hour lab session for five students each week. These assistants worked closely with the classroom teacher and were able to reinforce what was taught within the class. In English and mathematics, particularly, this added help proved invaluable as rewrites and
reworking of problems were done with individual and professional help coordinated with the regular classroom.

Individual academic and vocational counseling and testing sessions were held once a week to air problems and seek answers informally. Course objectives and material were, in the main, similar to the regular remedial courses, with the notable exception being, of course, the attempt to relate the core substantive material and pedagogy across the disciplines.

The extra course outside the Core Program was to provide experience outside the program and within the student's major field of interest in the University. It is interesting to note that most students in the Core Program worked from 11-15 hours per week in the College Work Study Program for financial aid to attend the University.

**SOURCES OF DATA**

The sources of data used in this study were lists of American College Test (ACT) scores; the files of the Registrar's Office, Admissions Office, Freshman Division; and the records of the individual instructors at the University of Southwestern Louisiana. Those students who were required to take remedial courses were identified by their ACT scores and records on file in the Registrar's Office and the Freshman Division. Final grades earned
by these students were obtained from the official school records and the records of individual instructor's on file in the Registrar's Office.

TREATMENT OF DATA

The students involved in this study were enrolled at the University of Southwestern Louisiana in the Fall of 1974 for the first time and were grouped as follows:

1. Group A consisted of 45 students who took a one semester "Core Program" consisting of English 90, Mathematics 90, Reading 90, and Speech 90, and received counseling and tutoring.

2. Group B consisted of 50 students randomly selected who were required to take Mathematics 90 and English 90 for one semester.

3. Group C consisted of 50 students randomly selected who received no remedial courses and who took Mathematics 101 and English 101.

The data were subjected to a _t_ test to determine whether any significant differences were evident with respect to grade achievement:

1. In English 90 between students in Group A and students in Group B;

2. In Mathematics 90 between students in Group A and students in Group B;

3. In English 101 between students in Group A
and students in Group B;

4. In Mathematics 101 between students in Group A and students in Group B;

5. First semester GPA between students in Group A and students in Group B;

6. Second semester GPA between students in Group A and students in Group B;

7. Third semester GPA between students in Group A and students in Group B;

8. Fourth semester GPA between students in Group A and students in Group B;

9. Cumulative GPA after two semesters between students in Group A and students in Group B;

10. Cumulative GPA after three semesters between students in Group A and students in Group B; and

11. Cumulative GPA after four semesters between students in Group A and students in Group B.

The data were subjected to analysis of covariance to determine whether any significant differences were evident with respect to grade achievement:

1. First semester GPA between students in Group A and students in Group C;
2. First semester GPA between students in Group B and students in Group C;
3. Second semester GPA between students in Group A and students in Group C;
4. Second semester GPA between students in Group B and students in Group C;
5. Third semester GPA between students in Group A and students in Group C;
6. Third semester GPA between students in Group B and students in Group C;
7. Fourth semester GPA between students in Group A and students in Group C;
8. Fourth semester GPA between students in Group B and students in Group C;
9. Cumulative GPA after two semesters between students in Group A and students in Group C;
10. Cumulative GPA after two semesters between students in Group B and students in Group C;
11. Cumulative GPA after three semesters between students in Group A and students in Group C;
12. Cumulative GPA after three semesters between students in Group B and students in Group C;
13. Cumulative GPA after four semesters between students in Group A and students in Group C; and
14. Cumulative GPA after four semesters between students in Group B and students in Group C.
The data were also analyzed on a percentage basis to determine the retention rates with respect to the students in each of the Groups—A, B, and C.
Chapter 4

PRESENTATION AND ANALYSIS OF DATA

This study was designed to compare two approaches to teaching low-achieving students at the college level. It also compared the remedial students with randomly selected, non-remedial students at the University of Southwestern Louisiana. Three groups of students participated in this study: Group A consisted of remedial students who took English 90, Mathematics 90, Reading 90, and Speech 90, and received counseling and tutoring. Group B consisted of remedial students who took English 90 and Mathematics 90. Group C consisted of students who received no remedial courses and who took Mathematics 101 and English 101. The total population of the study was 145 students. These students were divided accordingly: Group A-45 students; Group B-50 students; and Group C-50 students. The above Groups were studied for four semesters (Fall, 1974, through the Spring, 1976).

The remainder of this chapter is devoted to the presentation of data concerning the statistical relationship among the three Groups--A, B, and C. A t test at the .05 level of significance was used in testing the null hypothesis.
GRADES EARNED

Tables 1 through 4 reflect the distribution and comparison of letter grades earned by students in Group A and Group B in English 90, English 101, Mathematics 90, and Mathematics 101.

In Table 1 the hypothesis that no significant differences occurred regarding grade distribution in English 90 between Groups A and B was rejected at the .05 level of confidence. The computed critical ratio value was so large that it exceeded table value at even the .01 level of confidence.

The mean grade earned by students in Group A is 1.91 as compared to 1.24 for students in Group B. Twenty-nine students (64.5 percent) in Group A earned a grade of "C" or higher as compared to 19 students (38.0 percent) in Group B. Another interesting point is that one student (2.2 percent) in Group A withdrew from English 90 as compared to nine students (18.0 percent) in Group B. Group A also showed a lower failure rate, 11.1 percent (five students) as compared to 26.0 percent (13 students) in Group B. Group A showed superior grade achievement as compared to Group B; however, mean grade point averages for Groups A and B are less than 2.0 for English 90.
Table 1

Distribution of Grades of Students in Group A and Group B Enrolled in English 90

<table>
<thead>
<tr>
<th>GRADE</th>
<th>GROUP A</th>
<th>GROUP B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NUMBER</td>
<td>PERCENT</td>
</tr>
<tr>
<td>A</td>
<td>4</td>
<td>8.9</td>
</tr>
<tr>
<td>B</td>
<td>8</td>
<td>17.8</td>
</tr>
<tr>
<td>C</td>
<td>17</td>
<td>37.8</td>
</tr>
<tr>
<td>D</td>
<td>10</td>
<td>22.2</td>
</tr>
<tr>
<td>F</td>
<td>5</td>
<td>11.1</td>
</tr>
<tr>
<td>W</td>
<td>1</td>
<td>2.2</td>
</tr>
</tbody>
</table>

N = 45  N = 50

*Mean = 1.91  Mean = 1.24

*Mean and number exclude W grades. A four-point grading system was used: A = 4.0, B = 3.0, C = 2.0, D = 1.0, F = 0.0.

In Table 2 the hypothesis that no significant differences occurred regarding grade distribution in Mathematics 90 between Group A and B was rejected at the .05 level of confidence. The computed critical ratio value was so large that it exceeded table value at even the .01 level of confidence.
Table 2

Distribution of Grades of Students in Group A and Group B Enrolled in Mathematics 90

<table>
<thead>
<tr>
<th>GRADE</th>
<th>GROUP A</th>
<th></th>
<th>NUMBER</th>
<th>PERCENT</th>
<th></th>
<th>NUMBER</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>9</td>
<td></td>
<td>20.0</td>
<td></td>
<td></td>
<td>1</td>
<td>2.0</td>
</tr>
<tr>
<td>B</td>
<td>8</td>
<td></td>
<td>17.8</td>
<td></td>
<td></td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>C</td>
<td>22</td>
<td></td>
<td>48.9</td>
<td></td>
<td></td>
<td>9</td>
<td>18.0</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td></td>
<td>0.0</td>
<td></td>
<td></td>
<td>13</td>
<td>26.0</td>
</tr>
<tr>
<td>F</td>
<td>5</td>
<td></td>
<td>11.1</td>
<td></td>
<td></td>
<td>22</td>
<td>44.0</td>
</tr>
<tr>
<td>W</td>
<td>1</td>
<td></td>
<td>2.2</td>
<td></td>
<td></td>
<td>5</td>
<td>10.0</td>
</tr>
</tbody>
</table>

N = 45
N = 50

*Mean = 2.36
Mean = 0.78

*Mean and number exclude W grades. A four-point grading system was used: A = 4.0, B = 3.0, C = 2.0, D = 1.0, F = 0.0.

In Table 3 the hypothesis that no significant differences occurred regarding grade distribution in English 101 between Groups A and B was rejected at the .05 level of confidence. The computed critical ratio value was so large that it exceeded table value at even the .01 level of confidence. Tables 1, 2, and 3 indicate that the performance of Group A was superior to Group B.
Table 3

Distribution of Grades of Students in Group A and Group B Enrolled in English 101

<table>
<thead>
<tr>
<th>GRADE</th>
<th>GROUP A</th>
<th></th>
<th>GROUP B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NUMBER</td>
<td>PERCENT</td>
<td>NUMBER</td>
<td>PERCENT</td>
</tr>
<tr>
<td>A</td>
<td>6</td>
<td>15.0</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>B</td>
<td>14</td>
<td>35.0</td>
<td>3</td>
<td>8.8</td>
</tr>
<tr>
<td>C</td>
<td>11</td>
<td>27.5</td>
<td>9</td>
<td>26.5</td>
</tr>
<tr>
<td>D</td>
<td>3</td>
<td>7.5</td>
<td>8</td>
<td>23.5</td>
</tr>
<tr>
<td>F</td>
<td>3</td>
<td>7.5</td>
<td>6</td>
<td>17.7</td>
</tr>
<tr>
<td>W</td>
<td>3</td>
<td>7.5</td>
<td>7</td>
<td>20.6</td>
</tr>
</tbody>
</table>

N = 40

Mean = 2.49

N = 34

Mean = 1.37

*Mean and number exclude W grades. A four-point grading system was used: A = 4.0, B = 3.0, C = 2.0, D = 1.0, F = 0.0.

In Table 4 the hypothesis that no significant differences occurred regarding grade distribution in Mathematics 101 between Groups A and B was rejected at the .05 level of confidence. Table 4 indicates that the performance of Group B in Mathematics 101 was superior to Group A.
Table 4

Distribution of Grades of Students in Group A and Group B Enrolled in Mathematics 101

<table>
<thead>
<tr>
<th>GRADE</th>
<th>GROUP A</th>
<th></th>
<th>GROUP B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NUMBER</td>
<td>PERCENT</td>
<td>NUMBER</td>
<td>PERCENT</td>
</tr>
<tr>
<td>A</td>
<td>1</td>
<td>2.5</td>
<td>1</td>
<td>3.7</td>
</tr>
<tr>
<td>B</td>
<td>4</td>
<td>10.0</td>
<td>4</td>
<td>14.8</td>
</tr>
<tr>
<td>C</td>
<td>4</td>
<td>10.0</td>
<td>2</td>
<td>7.4</td>
</tr>
<tr>
<td>D</td>
<td>11</td>
<td>27.5</td>
<td>7</td>
<td>25.9</td>
</tr>
<tr>
<td>F</td>
<td>17</td>
<td>42.5</td>
<td>7</td>
<td>25.9</td>
</tr>
<tr>
<td>W</td>
<td>3</td>
<td>7.5</td>
<td>6</td>
<td>15.0</td>
</tr>
</tbody>
</table>

N = 40                     N = 27

*Mean = 0.95               Mean = 1.29

*Mean and number excluded W grades. A four-point grading system was used: A = 4.0, B = 3.0, C = 2.0, D = 1.0, F = 0.0.

Students in Groups A and B showed low grade achievement in Mathematics 101. Only nine students (22.5 percent) in Group A earned a grade of "C" or higher as compared to seven students (25.9 percent) for Group B. Twenty students (50 percent) in Group A either failed or withdrew as compared to 13 students (40.9 percent) in Group B.
SEMESTER GRADE POINT AVERAGE

Tables 5 through 9 reflect the distribution of mean semester grade point averages earned by students in Group A and Group B after one, two, three, and four semesters at the University of Southwestern Louisiana.

Table 5 gives a comparison of mean grade point average between Group A and Group B after one, two, three, and four semesters. It also shows the number and percentage of students remaining in school after one, two, three, and four semesters. This table illustrates a gradual decline in the mean semester grade point average and a gradual decline in the number of students enrolled from 45 in the first semester to 30 at the end of the fourth semester for Group A. Group B showed a greater decline from 50 in the first semester to 20 at the end of the fourth semester. In mean grade point average, Group A showed a gradual decline from 2.45 at the end of the first semester to 1.51 at the end of the fourth semester. However, Group B showed a gradual increase from 1.25 at the end of the first semester to an increase of 1.65 at the end of the fourth semester.
Table 5

Distribution of Mean Semester Grade Point Average of Students in Group A and Group B after One, Two, Three, and Four Semesters

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>GROUP A</th>
<th>GROUP B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MGPA</td>
<td>N</td>
</tr>
<tr>
<td>One (Fall, 1974)</td>
<td>2.45</td>
<td>45</td>
</tr>
<tr>
<td>Two (Spring, 1975)</td>
<td>1.70</td>
<td>43</td>
</tr>
<tr>
<td>Three (Fall, 1975)</td>
<td>1.53</td>
<td>37</td>
</tr>
<tr>
<td>Four (Spring, 1976)</td>
<td>1.51</td>
<td>30</td>
</tr>
</tbody>
</table>

Tables 6 and 7 reflect mean grade point averages for Group A and Group B for the first and second semesters at the University of Southwestern Louisiana. From the tables and the statistical comparison, Group A's performance was superior to that of Group B for the first and second semesters. This trend is reversed for the fourth semester (Table 9). The semester mean grade point averages are the same for the third semester (Table 8).
In Table 6 the hypothesis that no significant differences occurred regarding grade point averages after the first semester between Groups A and B in this study was rejected at the .05 level of confidence. The computed critical ratio value was so large that it exceeded table value at even the .01 level of confidence. The advantage was in favor of Group A.

Table 6

Distribution of Mean Grade Point Average of Students in Group A and Group B after the First Semester (Fall, 1974)

<table>
<thead>
<tr>
<th>GROUP A</th>
<th>GROUP B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>45</td>
</tr>
<tr>
<td>Percentage</td>
<td>100</td>
</tr>
<tr>
<td>Mean Grade Point Average</td>
<td>2.45</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>.57</td>
</tr>
</tbody>
</table>

In Table 7 the hypothesis that no significant differences occurred regarding grade point average after the second semester between Group A and B in this study was rejected at the .05 level of confidence. The computed critical ratio value was so large that it exceeded table value at even the .01 level of confidence.
Table 7

Distribution of Mean Grade Point Average of Students in Group A and Group B after the Second Semester (Spring, 1975)

<table>
<thead>
<tr>
<th></th>
<th>GROUP A</th>
<th></th>
<th>GROUP B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>43</td>
<td>Number of Students</td>
<td>39</td>
</tr>
<tr>
<td>Percentage</td>
<td>96</td>
<td>Percentage</td>
<td>78</td>
</tr>
<tr>
<td>Mean Grade Point Average</td>
<td>1.70</td>
<td>Mean Grade Point Average</td>
<td>1.42</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>.62</td>
<td>Standard Deviation</td>
<td>.43</td>
</tr>
</tbody>
</table>

In Table 8 the hypothesis that no significant differences occurred between Group A and Group B was accepted. The MGPA for Group A and Group B are identical, however, the percentage of students remaining in college after three semesters is over twice as large for Group A (82 percent) as compared to Group B (40 percent). The weaker students in the non-structured remedial program (Group B) dropped out of college, whereas the weaker students in the structured remedial program (Group A) remained in college.
Table 8
Distribution of Mean Grade Point Average of Students in Group A and Group B after the Third Semester (Fall, 1975)

<table>
<thead>
<tr>
<th></th>
<th>GROUP A</th>
<th>GROUP B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>37</td>
<td>20</td>
</tr>
<tr>
<td>Percentage</td>
<td>82</td>
<td>40</td>
</tr>
<tr>
<td>Mean Grade Point Average</td>
<td>1.53</td>
<td>1.53</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>.35</td>
<td>.20</td>
</tr>
</tbody>
</table>

In Table 9 the hypothesis that no significant differences occurred between Group A and Group B was accepted. However, it is interesting to note that the MGPA for Group B is larger than the MGPA for Group A for the fourth semester.

Table 9
Distribution of Mean Grade Point Average of Students in Group A and Group B after the Fourth Semester (Spring, 1976)

<table>
<thead>
<tr>
<th></th>
<th>GROUP A</th>
<th>GROUP B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Percentage</td>
<td>67</td>
<td>40</td>
</tr>
<tr>
<td>Mean Grade Point Average</td>
<td>1.51</td>
<td>1.65</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>.35</td>
<td>.58</td>
</tr>
</tbody>
</table>
CUMULATIVE GRADE POINT AVERAGE

Tables 10 through 13 reflect the distribution of mean cumulative grade point averages earned by students in Group A and Group B after two, three, and four semesters.

In Table 10 Group A shows a slight decrease in mean cumulative grade point average from the second to the fourth semester and Group B shows an increase in mean cumulative grade point average from the second semester to the third semester. It is interesting to note, although Group A shows a slight decrease in cumulative grade point average, it has remained above the 2.0 mark after four semesters in college. Group B shows a slight increase in cumulative grade point average, however, this group has not reached the 2.0 mark after four semesters in college.

Group A shows a slight decline in enrollment from 96 percent (43 students) to 67 percent (30 students) at the end of the fourth semester. Group B shows a greater decline in enrollment from 78 percent (39 students) to 40 percent (20 students) at the end of the fourth semester.
### Table 10

**Distribution of Mean Cumulative Grade Point Average of Students in Group A and Group B after Two, Three, and Four Semesters**

<table>
<thead>
<tr>
<th></th>
<th>GROUP A</th>
<th></th>
<th></th>
<th>GROUP B</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MGPA</td>
<td>N</td>
<td>PERCENT</td>
<td>MGPA</td>
<td>N</td>
<td>PERCENT</td>
</tr>
<tr>
<td>Two (Spring, 1975)</td>
<td>2.18</td>
<td>43</td>
<td>96</td>
<td>1.46</td>
<td>39</td>
<td>78</td>
</tr>
<tr>
<td>Three (Fall, 1975)</td>
<td>2.17</td>
<td>37</td>
<td>82</td>
<td>1.90</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Four (Spring, 1976)</td>
<td>2.04</td>
<td>30</td>
<td>67</td>
<td>1.89</td>
<td>20</td>
<td>40</td>
</tr>
</tbody>
</table>

In Table 11 the hypothesis that no significant differences occurred between Group A and Group B in cumulative grade point average was rejected at the .05 level of confidence. The computed critical ratio value was so large that it exceeded table value at even the .01 level of confidence. Table 11 indicates that the performance of Group A was superior to Group B. Group A has a mean cumulative grade point average of 2.18 and Group B has a mean cumulative grade point average of only 1.46 after two semesters in college.
Table 11

Distribution of Mean Cumulative Grade Point Average of Students in Group A and Group B after Two Semesters (Fall, 1974 Through Spring, 1975)

<table>
<thead>
<tr>
<th></th>
<th>GROUP A</th>
<th></th>
<th>GROUP B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>43</td>
<td>Number of Students</td>
<td>39</td>
</tr>
<tr>
<td>Percentage</td>
<td>96</td>
<td>Percentage</td>
<td>78</td>
</tr>
<tr>
<td>Mean Grade Point Average</td>
<td>2.18</td>
<td>Mean Grade Point Average</td>
<td>1.46</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>.47</td>
<td>Standard Deviation</td>
<td>.57</td>
</tr>
</tbody>
</table>

In Table 12 the hypothesis that no significant differences occurred between Group A and Group B in cumulative grade point average was rejected at the .05 level of confidence. The advantage was in favor of Group A. Group A has a mean cumulative grade point average of 2.17 after three semesters and Group B has a mean cumulative grade point average of only 1.90 after three semesters, however, the percentage of students remaining in college after three semesters is over twice as large for Group A (82 percent) as compared to Group B (40 percent).
In Table 13 the hypothesis that no significant differences occurred between Group A and Group B was accepted. However, Group A shows a slightly higher grade point average than Group B. Group A maintained a cumulative grade point average of greater than 2.0 for the first four semesters in college. Group B has a cumulative grade point average of less than 2.0 for the first four semesters in college. Group A has a mean grade point average of 2.04 for the fourth semester as compared to a mean grade point average of 1.89 for Group B. Group A also showed a higher retention rate (82 percent) as compared to Group B (40 percent).
Table 13

Distribution of Mean Cumulative Grade Point Average of Students in Group A and Group B after Four Semesters (Fall, 1974 Through Spring, 1976)

<table>
<thead>
<tr>
<th>GROUP A</th>
<th>GROUP B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>30</td>
</tr>
<tr>
<td>Percentage</td>
<td>67</td>
</tr>
<tr>
<td>Mean Grade Point Average</td>
<td>2.04</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>.58</td>
</tr>
</tbody>
</table>

Tables 14 through 16 reflect the distribution and comparison of mean semester grade point average among Groups A, B, and C after one, two, three, and four semesters.

Table 14 gives a distribution of mean semester grade point averages of students for remedial Groups A and B and non-remedial Group C. Group C earned a higher mean semester grade point average than remedial Groups A and B, except for the first semester in which Group A shows a slightly higher mean grade point average than Group C. Group A shows a steady decline in mean semester grade point average, whereas remedial Group B and non-remedial Group C show steady increases in mean semester
grade point averages, except for the fourth semester in which Group C shows a slight decline. The trends indicate a gradual decrease in grade point average for Group A and a higher retention rate (67 percent), whereas the trend for Group B is a gradual increase in grade point average and a low retention rate (40 percent). As can be noted, Group A has a lower grade point average for the fourth semester than Group B. However, the retention rate is higher for Group A than Group B.

Table 14
Distribution of Mean Semester Grade Point Average of Students in Group A, Group B, and Group C after One, Two, Three, and Four Semesters (Fall, 1974 Through Spring, 1976)

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>GROUP A</th>
<th>GROUP B</th>
<th>GROUP C</th>
</tr>
</thead>
<tbody>
<tr>
<td>One (Fall, 1974)</td>
<td>2.45 45</td>
<td>1.25 50</td>
<td>2.41 50</td>
</tr>
<tr>
<td>Two (Spring, 1975)</td>
<td>1.70 43</td>
<td>1.42 39</td>
<td>2.50 43</td>
</tr>
<tr>
<td>Three (Fall, 1975)</td>
<td>1.53 37</td>
<td>1.53 20</td>
<td>2.72 32</td>
</tr>
<tr>
<td>Four (Spring, 1976)</td>
<td>1.51 30</td>
<td>1.65 20</td>
<td>2.66 37</td>
</tr>
</tbody>
</table>
In Table 15 the hypothesis that no significant differences occurred between Group A and Group C was accepted for the first semester. However, the hypothesis that no significant differences occurred between Group A and Group C after the second, third, and fourth semesters was rejected at the .05 level of confidence when the statistical method, analysis of covariance, was applied to the data.

Table 15

Distribution of Mean Difference in Semester Grade Point Average Between Group A and Group B after One, Two, Three, and Four Semesters

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>GROUP A</th>
<th>GROUP B</th>
<th>MEAN DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>One (Fall, 1974)</td>
<td>2.45</td>
<td>2.41</td>
<td>+.04</td>
</tr>
<tr>
<td>Two (Spring, 1975)</td>
<td>1.70</td>
<td>2.50</td>
<td>-.80</td>
</tr>
<tr>
<td>Three (Fall, 1976)</td>
<td>1.53</td>
<td>2.72</td>
<td>-.19</td>
</tr>
<tr>
<td>Four (Spring, 1976)</td>
<td>1.51</td>
<td>2.55</td>
<td>-.15</td>
</tr>
</tbody>
</table>

In Table 16 the hypothesis that no significant differences occurred between Group B and Group C after one, two, three, and four semesters was rejected at the
.05 level of confidence when the statistical method, analysis of covariance, was applied to the data.

Table 16
Distribution of Mean Difference in Semester Grade Point Average Between Group B and Group C after One, Two, Three, and Four Semesters

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>GROUP B</th>
<th>GROUP C</th>
<th>MEAN DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>One (Fall, 1974)</td>
<td>1.25</td>
<td>2.41</td>
<td>-0.16</td>
</tr>
<tr>
<td>Two (Spring, 1975)</td>
<td>1.42</td>
<td>2.50</td>
<td>-1.08</td>
</tr>
<tr>
<td>Three (Fall, 1976)</td>
<td>1.53</td>
<td>2.72</td>
<td>-1.19</td>
</tr>
<tr>
<td>Four (Spring, 1976)</td>
<td>1.65</td>
<td>2.66</td>
<td>-1.01</td>
</tr>
</tbody>
</table>

Tables 17 through 19 reflect the distribution and comparison of mean cumulative grade point averages among Groups A, B, and C after two, three, and four semesters.

Table 17 gives a distribution of mean cumulative grade point average of students in remedial Groups A and B and non-remedial Group C. Group C shows a higher mean cumulative grade point average than remedial Groups A and B. Group A shows a slight decline in mean
cumulative grade point average. Group B shows the opposite; i.e., a slight increase in mean cumulative grade point average in the third semester and a slight decrease in mean cumulative grade point average for the fourth semester. Non-remedial Group C shows a slight increase in the third semester and a slight decrease in the fourth semester. Group C shows a higher mean cumulative grade point average than the remedial Groups A and B.

Table 17

Distribution of Mean Cumulative Grade Point Average Among Group A, Group B, and Group C after Two, Three, and Four Semesters (Fall, 1974 Through Spring, 1976)

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>GROUP A</th>
<th>GROUP B</th>
<th>GROUP C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two (Spring, 1975)</td>
<td>2.18 43</td>
<td>1.46 39</td>
<td>2.63 43</td>
</tr>
<tr>
<td>Three (Fall, 1975)</td>
<td>2.17 37</td>
<td>1.80 20</td>
<td>2.80 32</td>
</tr>
<tr>
<td>Four (Spring, 1976)</td>
<td>2.04 30</td>
<td>1.89 20</td>
<td>2.77 37</td>
</tr>
</tbody>
</table>
In Table 18 the hypothesis that no significant differences occurred in mean cumulative grade point average between Group A and Group C after two, three, and four semesters was rejected at the .05 level of confidence when the statistical method, analysis of covariance, was applied to the data.

Table 18

Distribution of Mean Cumulative Grade Point Average Between Group A and Group C after Two, Three, and Four Semesters

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>GROUP A</th>
<th>GROUP C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MGPA</td>
<td>N</td>
</tr>
<tr>
<td>Two (Spring, 1975)</td>
<td>2.18</td>
<td>43</td>
</tr>
<tr>
<td>Three (Fall, 1975)</td>
<td>2.17</td>
<td>37</td>
</tr>
<tr>
<td>Four (Spring, 1976)</td>
<td>2.04</td>
<td>30</td>
</tr>
</tbody>
</table>

In Table 19 the hypothesis that no significant differences occurred in mean cumulative grade point average between Group B and Group C after two, three, and four semesters was rejected at the .05 level of confidence when the statistical method, analysis of covariance, was applied to the data.
The mean difference in mean cumulative grade point average after two semesters between Group B and Group C is -1.17. The mean difference decreased slightly to -0.90 after three semesters and to -0.88 after four semesters. Group C showed superior grade achievement.

Table 19
Distribution of Mean Cumulative Grade Point Average Between Group B and Group C after Two, Three, and Four Semesters

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>GROUP B</th>
<th>GROUP C</th>
<th>MEAN DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two (Spring, 1975)</td>
<td>1.46</td>
<td>2.63</td>
<td>-1.17</td>
</tr>
<tr>
<td>Three (Fall, 1975)</td>
<td>1.90</td>
<td>2.80</td>
<td>-0.90</td>
</tr>
<tr>
<td>Four (Spring, 1976)</td>
<td>1.89</td>
<td>2.77</td>
<td>-0.88</td>
</tr>
</tbody>
</table>

RETENTION RATE

Table 20 reflects the distribution of students on a percentage basis remaining in school at the University of Southwestern Louisiana from the Fall, 1974, through the Spring, 1976.
Table 20 shows a gradual decline in students enrolled in school from the Fall, 1974, through the Spring of 1976 in Groups A, B, and C. Group B showed the greater decline from 50 students in the Fall, 1974, to 20 students at the end of the Spring, 1976. This represents a 60 percent decline or 40 percent retention.

**Table 20**

Distribution of the Number and Percentage of Students Remaining in School from 1974 Through 1976

<table>
<thead>
<tr>
<th></th>
<th>GROUP A</th>
<th>GROUP B</th>
<th>GROUP C</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEMESTER</td>
<td>N</td>
<td>PERCENT</td>
<td>N</td>
</tr>
<tr>
<td>One (Fall, 1974)</td>
<td>45</td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>Two (Spring, 1975)</td>
<td>43</td>
<td>96</td>
<td>39</td>
</tr>
<tr>
<td>Three (Fall, 1975)</td>
<td>37</td>
<td>82</td>
<td>20</td>
</tr>
<tr>
<td>Four (Spring, 1976)</td>
<td>30</td>
<td>67</td>
<td>20</td>
</tr>
</tbody>
</table>

Group A and Group C were similar. Group A declined from 45 students in the Fall, 1974 to 30 students at the end of the Spring, 1976. This represents a 34 percent decline or 67 percent retention at the end of Spring Semester, 1976. Group C declined from 50 students in the Fall Semester, 1974 to 37 students at the end of the Spring
Semester, 1976. This represents a 26 percent decline or 74 percent retention at the end of the Spring Semester, 1976.
Chapter 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to compare two approaches to teaching low-achieving students at the college level at the University of Southwestern Louisiana. To accomplish the purpose of this study, the students were assigned to three groups. Group A consisted of 45 students enrolled on the basis of their American College Test scores in Mathematics 90, English 90, Reading 90, and Speech 90. Group B consisted of 50 students who were required on the basis of their American College Test scores to enroll in English 90 and Mathematics 90. Group C consisted of 50 students who scheduled Mathematics 101 and English 101 because their ACT scores indicated regular college level courses.

To further accomplish the purpose of the study, grades earned by all three groups were compared. The data were analyzed by t tests and covariance, with retention rate also being subjected to an analysis of variance. The .05 level of significance was used in testing all null hypotheses.
The following findings pertain to academic achievement in English 90, Mathematics 90, English 101, and Mathematics 101 between students in Group A and Group B under consideration in this study at the University of Southwestern Louisiana. The hypothesis that no significant differences occurred between Group A and Group B was rejected at the .05 level of confidence, indicating that differences did occur with regard to academic achievement between the two remedial groups of students. The computed critical ratio value was so large that it exceeded table value at even the .01 level of confidence in English 90, Mathematics 90, and English 101. This rather pronounced difference showed superior performance by Group A, the Core Group.

Significant differences occurred between Group A and Group B with regard to grade achievement in Mathematics 101. On the basis of comparison of mean grades, the difference was in favor of Group B.

The following findings pertain to achievement of semester grade point averages after one, two, three, and four semesters at the University of Southwestern Louisiana between the two remedial Groups, A and B.

The null hypothesis was accepted at the .01 level of confidence with respect to academic achievement in
semester grade point average between Group A and Group B for the first and second semester. In each case the difference favored Group A.

When Group A and Group B were compared for the third and fourth semester, the hypothesis that no significant differences occurred was accepted.

When Group A and Group B were compared with the non-remedial Group, C, with respect to grade achievement in semester grade point averages, significant differences occurred. In each case except for the first semester between Group A and Group C, the difference favored Group C. Group A showed a smaller difference when compared with Group C than did Group B.

The following findings pertain to achievement of cumulative grade point averages after two, three, and four semesters between Group A and Group B.

The hypothesis that no significant differences occurred between Group A and Group B was rejected at the .05 level for the second and third semesters. In each case the difference favored Group A. The hypothesis that no significant differences occurred between Group B in the fourth semester was rejected at the .05 level of confidence.

When Group A and Group B were compared with the non-remedial Group, C, with respect to grade achievement in cumulative grade point averages,
significant differences occurred. In each case the
difference favored Group C. Group A showed a
smaller difference when compared to Group C than
did Group B.

Examination of retention rate after one,
two, three, and four semesters at the University
of Southwestern Louisiana for the students in this
study revealed that Group A and Group C showed
similar trends. Group B showed marked differences.
The data were analyzed by the percentage analysis
method.

Students in Group A showed a 96 percent
retention rate at the end of the second semester,
an 82 percent retention rate at the end of the third
semester, and a 67 percent retention rate at the end of
the fourth semester. This compared very favorably with
Group C which showed an 88 percent retention rate at
the end of second semester, a 64 percent retention rate
at the end of the third semester, and a 74 percent
retention rate at the end of the fourth semester.

Students in Group B followed a different
pattern. Students in Group B showed a 78 percent
retention rate at the end of the second semester, a
40 percent retention rate at the end of third semester,
and a 40 percent retention rate at the end of the
fourth semester.
The results seem to indicate that remedial students in a structured program (Group A) followed essentially the same retention pattern as did the students in non-remedial Group C. Students in the non-structured program (Group B) did not compare favorably with non-remedial Group C.

CONCLUSIONS

The following conclusions were drawn on the basis of the findings of this study:

1. The expectation for academic success in remedial courses is greater at the University of Southwestern Louisiana for students in the structured remedial program (Group A) than for students in the non-structured remedial program (Group B).

2. The expectation for academic success after one and two semesters is greater for students in the structured remedial program than for students in the non-structured remedial program.

3. The expectation for academic success for both the structured and non-structured remedial students after three and four semesters is approximately the same. However, the retention is much higher for the students in the structured remedial program.

4. Students in the non-remedial program showed superior grade achievement after one, two,
three, and four semesters to that of the students taking the remedial programs. However, students in the structured remedial program followed essentially the same retention pattern as did students in the non-remedial program.

5. Students in the structured remedial program tend to show greater achievement than students in the non-structured remedial program.

6. Students in the structured remedial program tend to have a greater retention rate than students in the non-structured remedial program.

7. A structured remedial program seems to be more effective than a non-structured remedial program.

RECOMMENDATIONS

A major limitation existed in this study. This limitation deals with the motivational factors of the remedial students both internally and externally. The writer, therefore, recommends further research involving motivational factors affecting the grade achievement for remedial students.

A follow-up study should be made of the students of this study to determine if the findings and trends for the first four semesters are relatively consistent with the second four semesters in their degree programs.
Colleges and universities with remedial programs should provide adequate funds for sound structured remedial assistance programs.

Colleges and universities that admit low-achieving students should offer structured remedial assistance programs to enhance the remedial students' chances for success.

Instructors and counselors who teach low-achieving students should be involved in planning and operation of structured remedial assistance programs.

Since it is difficult to determine which remedial student will be successful, the remedial program should be treated as an integral part of the university system serving all low-achieving students; and it should be treated with the same degree of dignity and respect as other programs.

Structured remedial programs are expensive. Therefore, colleges and universities should periodically evaluate such programs as well as their commitments in the remedial area.

Colleges and universities that admit low-achieving students and are concerned about declining enrollment should examine the effectiveness of structured remedial assistance programs.
SELECTED BIBLIOGRAPHY


VITA

James A. Caillier was born September 24, 1940 in Lafayette, Louisiana. He attended elementary and high school in Lafayette and was graduated in 1960. He entered the University of Southwestern Louisiana and received a Bachelor of Science degree in Secondary Education in the Spring of 1964. In the Summer of 1966 he entered Graduate School at Southern University and earned the Master of Science in the Teaching of Chemistry in August of 1968.

He was employed as a high school science and mathematics teacher from 1964 to 1967 in the Lafayette Parish School System. In 1968 he was promoted to coordinator of school and home activities where he served for two years. In 1970 he accepted a position as Director of Special Services at the University of Southwestern Louisiana. He is currently serving as Director of the Freshman Division at the University of Southwestern Louisiana, a position he has held since June 1976. He is married to Geraldine E. Raphael Caillier and they have three children, Jennifer, Gerard, and Sylvia.
Candidate:  James Allen Caillier

Major Field:  Education

Title of Thesis:  A Comparative Study of Two Approaches to Teaching Low-Achieving Students at the College Level

Approved:

Richard A. Mussweiler
Major Professor and Chairman

James E. Fayrham
Dean of the Graduate School

EXAMINING COMMITTEE:

C. Robert Blackmon

J. C. Bremlion

E. M. Conn

T. W. R. 

Date of Examination:

April 3, 1978