A COMPARATIVE STUDY OF THE ACADEMIC PERFORMANCE OF TWO GROUPS OF ENTERING COLLEGE FRESHMEN

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A COMPARATIVE STUDY OF THE ACADEMIC PERFORMANCE OF
TWO GROUPS OF ENTERING COLLEGE FRESHMEN

DISSERTATION

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By

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CHAPTER I

INTRODUCTION

If one were to look retrospectively at the American educational system, he would find that prior to the end of World War II, it seemed that the primary aims of colleges and universities were to provide preprofessional training for the technical elite and to provide a gentleman's liberal education for the offspring of the well-to-do. Today, however, a number of the colleges and universities across the country have assumed the responsibility of offering post-high school education to almost anyone who desires it.

The starting point of a student's higher educational experiences—the freshman year—is perhaps the most crucial. It is during this time that the student develops critical attitudes toward college in general. The trauma of leaving home for the first time and entering the milieu of the college can be critical for some students. In a college program, too, a student has to learn to work more independently of close supervision. In addition, he undertakes more problem-solving activities which require specific work and study techniques.
Colleges and universities are composed of students with varying needs and abilities. Some students come to college because they are from a family of college graduates and are expected to continue this family tradition. Others are primarily interested in gaining vocational training, seeking a mate, trying to avoid involvement in Viet Nam, and getting a college degree. Some students know that a college degree is required for occupational success in their chosen fields of endeavor. The list could go on indefinitely. Whatever the students' backgrounds and reasons are, however, they usually want to learn. Their ability to learn varies as does their degree of willingness to learn. The colleges and universities, then, must aim to make learning relevant to the orientation, purposes, interests, weaknesses, and strengths of these students.

Colleges and universities across the country are experimenting with new types of freshmen orientation programs. These programs are as varied as the institutions which conduct them. The methods and techniques employed are governed, for the most part, by the purposes of the program and the facilities available. The extent of the college's orientation program is dependent on the limits of its imagination, energy, and resources. Whatever course of action colleges take, however, will have a profound effect upon its students, especially during their freshman year.
It is during this time that freshmen's attitudes toward college really begin to take on meaning.

Sometimes students feel that their personal development will be promoted by exposure to the wisdom of the past and the accumulated knowledge of the present. When this fails to happen, one could expect these students to become rebellious, apathetic, alienated and/or a combination of these factors. As a result, more colleges should take a critical look at their programs and their approach to orientation to see what can be done to change this feeling on the part of the students.

Statement of the Problem

The problem with which this study was concerned was that of determining how the academic performance of entering college freshmen at Jarvis Christian College who participated in a summer preparatory and enrichment program would compare with the academic performance of entering college freshmen who did not participate in the program at the end of the school year.

Purpose of the Study

Specifically, it was the purpose of this study to compare the academic performance of students who participated in a summer preparatory and enrichment program with students who did not participate with respect to sex,
Nelson-Denny Reading Test scores, School and College Ability Test scores, and college grade-point averages.

Hypotheses

In order to fulfill the purpose of this study, the following hypotheses were formulated:

1. There would be no significant difference between mean test scores of CRAM (special eight-week college preparatory and enrichment program) students and non-CRAM students with respect to the School and College Ability Test.

2. There would be no significant difference between mean test scores of CRAM female students and non-CRAM female students on the School and College Ability Test.

3. There would be no significant difference between mean test scores of CRAM male students and non-CRAM male students on the School and College Ability Test.

4. There would be no significant difference between mean test scores of CRAM students and non-CRAM students on the Nelson-Denny Reading Test.

5. There would be no significant difference between mean test scores of CRAM female students and non-CRAM female students on the Nelson-Denny Reading Test.

6. There would be no significant difference between mean test scores of CRAM male students and non-CRAM male students on the Nelson-Denny Reading Test.
7. There would be a significant difference between mean grade-point averages of CRAM students and non-CRAM students relative to academic performance as determined by teacher-assigned semester marks.

8. There would be a significant difference between mean grade-point averages of CRAM female students and non-CRAM female students relative to academic performance as determined by teacher-assigned semester marks.

9. There would be a significant difference between mean grade-point averages of CRAM male students and non-CRAM male students relative to academic performance as determined by teacher-assigned semester marks.

10. There would be a significant difference between mean cumulative grade-point averages of CRAM male students and non-CRAM male students.

11. There would be a significant difference between mean cumulative grade-point averages of CRAM female students and non-CRAM female students.

12. There would be a significant difference between mean cumulative grade-point averages of CRAM students and non-CRAM students.

13. The college drop-out rate for CRAM students will be lower than the drop-out rate of non-CRAM students.
Definition of Terms

The following definitions were developed to aid in understanding the terminology used in this study:

1. **CRAM Participants** were those students who participated in the special summer preparatory and enrichment program and constituted the experimental group.

2. **Nelson-Denny Reading Test** is a standardized test designed to provide a useful measure of reading ability in terms of vocabulary and comprehension. In addition, the test provides a measure of reading rate to supplement and complement the information obtained from the other two parts of the test (10, p. 3).

3. **Non-CRAM Participants** consisted of those students who were invited to participate in the special summer preparatory and enrichment program but did not participate. These participants were designated as the control group.

4. **School and College Ability Test** is a standardized test designed to evaluate a student's capacity to perform academic tasks at the next higher educational level. **SCAT** focuses on two essential abilities: verbal and quantitative. Verbal skills are measured by vocabulary and sentence completion items; quantitative abilities are assessed by items involving computation and arithmetic reasoning (5, p. 8).

5. **Summer Preparatory and Enrichment Program** (CRAM) was an eight-week program designed to provide each participant with experiences that would accelerate and facilitate
successful transition from high school to college in an effort to maximize college adjustment and excellent academic achievement and performance (11, p. 1). (CRAM is the name given to this special program; it is not an acronym.)

Background and Significance of the Study

Higher education in the United States is in the process of an accelerating revolution and a continuing re-evaluation and examination of its program. Brown stated:

America has attempted to make higher education more widely available to its young people than any other society has ever done before. There are pressing reasons why further expansion of educational opportunity should be encouraged, and at the same time, there are serious problems that must be solved if this expansion is to be purposeful and orderly (2, p. 28).

Each year institutions of higher education direct attention to increasingly comprehensive and complex programs for the induction and orientation of new students. Orientation to college is widely recognized as a profitable, useful, and generally valuable experience for freshmen students. A number of these programs are carefully planned, painstakingly executed, and based on research relative to what works, what should be done, or both. Fitzgerald and Busch (6, p. 270) identified the components of what they believed to be an ideal collegiate orientation program. They
stated that each institution should design a program that would accurately reflect the educational objectives of the college. The program should be confined within the days and hours available for orientation. The orientation program should adequately utilize the contributions of the faculty and staff in this aspect of the educational process.

It is probably true that today's freshmen students are more knowledgeable, intellectually aware, and socially concerned than those in prior years. Therefore, attempts should be made to help students adjust to college and to the benefits of a college education. The courses in which a student registers will probably plague or comfort him for at least a semester. These first course experiences, then, are crucial.

From a total of 220 students interviewed by Freedman (7), close to thirty percent admitted to having serious academic problems. He found that their community of origin and the size of the high school from which they graduated held little significance. The most critical area of social adjustment centered around study habits and lack of study techniques. This was a greater problem for the male students than for the female students.

Bertston (1), in his study of the school dropout problem, found that a larger percentage than average of the dropouts had poor health, low scholastic achievement, and poor
economic conditions. These factors caused them to lose interest, become dissatisfied, and eventually to drop out of school.

Scales (12) surveyed member institutions of the National Association of Collegiate Deans and Registrars concerning their respective student retention and withdrawal problems. The study was designed to answer questions relative to the rate of student retention and withdrawal in public colleges, private colleges, liberal arts colleges, and junior colleges attended predominantly by Negroes. There were fourteen states included in the final sample, most of them located in the Deep South. The reasons given for college dropouts as stated by these institutions were financial problems, poor scholarship, and transfer of the students to another institution. The inclusion of illness, marriage, and military service brought to six the number of reasons most frequently stated by the participating colleges. The size of the institution did not seem to influence the reasons named.

There are numerous reasons why freshmen students drop out of college and why they become frustrated with their academic performance in college. Michaelson stated:

Freshmen students sometimes get low grades, not because of indifference, stupidity, and whatnot, but because of poor training in poor high schools; schools, it might be stressed, that have had insufficient public tax support,
and are thus handicapped by inferior teachers
and inferior plant facilities (9, p. 191).

Collins (3, p. 54) stated that out of every 100
students who began as freshmen in the four-year colleges
and universities, less than sixty would complete the
requirements for the baccalaureate degree. Seventy-five
percent of those enrolled in public junior colleges
labeled themselves as transfer students, whereas less than
half that number actually matriculated as juniors in a four-
year college or university. According to Michaelson (9),
only fifty percent of the entering students graduated
from Michigan's state-supported college, some of them
taking almost five years to do so. He inferred that these
statistics very likely held true in many other colleges
throughout the country.

Younge (13) reported that among the students at North
Carolina College, approximately thirty percent of the
freshmen students were dropped at the end of their freshman
year for scholastic reasons. He utilized data from the
registrar's office, high school transcripts, North Carolina
State Department of Public Instruction files, California
Mental Maturity Test scores, and college marks in an effort
to identify factors relative to the failures of the college
freshmen.

Daniels (4) studied the dropouts at the University of
Alabama with respect to certain academic and personality
variables. Comparisons were made between entering freshmen of the summer and fall sessions of 1960 who had been dropped from college or who had withdrawn from college by the end of the winter semester, January, 1962, and those entering freshmen who were still in attendance at that time. The sample consisted of 1,236 college freshmen. The study was based on the Verbal scores of the School and College Ability Test and Personality scores of the Gordon Personal Inventory. The statistical procedure used was the t-test. The study revealed that high academic aptitude students differed from low academic aptitude students beyond the .001 level of confidence on Verbal scores of the School and College Ability Test. Significant evidence was found between dropouts and students who remained in college on several variables; namely, trustful and tolerant, perseverance, inquiring, energetic, vigorous, calm and collected, and cautious. He predicted that high academic aptitude students were more likely to remain in college than low academic aptitude students. Low academic aptitude students were more homogeneous with respect to personality variables than high academic aptitude students.

Gardner (8) conducted a study relative to the dropouts at Northwest Mississippi Junior College. One of the purposes of the study was to determine if anything could be done by the institution to prevent the large percentage of dropouts. Of 643 freshmen students who registered in September, 1966,
254 of these students failed to return to Northwest in September, 1967, representing a 39.5 percent loss of freshmen students.

These factors alone give measure to the dire need for more and better programs for orienting freshmen to college life and to college expectations. Instruction undeniably comes first in the hierarchy of college functions. If colleges and universities are to open their doors to, and attract an ever-enlarging segment of, the population, they have a more encompassing task to perform to cope with these needs. Prospective students must be encouraged to assess their own interests, abilities, traits, and ambitions to derive the benefits a college education offers.

Limitations of the Study

This study was limited to fifty freshmen male students and fifty female students who completed two consecutive semesters of college work at Jarvis Christian College, a small, private, predominantly black college in East Texas, during the 1969-70 school year. Students who transferred from another institution, students who had attended Jarvis previously, and students who had graduated from high school prior to May, 1969, were excluded from the study.
Basic Assumptions

For the purpose of this study, it was assumed that

1. any outside activity would be equal in both groups so as not to affect the results of the study;

2. that the two groups would have similar intelligence quotients; and

3. that academic achievement could be identified and measured with the use of standardized instruments.

Chapter Summary

The purpose of this study was to compare the academic performance of a group of entering college freshmen who participated in an eight-week college preparatory and enrichment program with the academic performance of a group of entering college freshmen who were invited to participate but did not at the end of the 1969-70 school year. Subjects used in the study were freshmen students enrolled at Jarvis Christian College, a small, private, predominantly black college, located in East Texas.

Research tended to indicate that most college have a dropout problem, especially among their freshmen students. Special orientation, preparation-for-college, and enrichment programs are being devised in an attempt to eliminate this problem.

The significance and need for the study rested primarily on the analysis and comparison of the success of
these students in college. This was important from an instructional as well as administrative point of view. In addition, the study was enhanced because findings involving both groups might lead to improvement in methods, selection of students, and areas in which the students' strengths and weaknesses could be recognized. The findings might also serve predictive, screening, counseling, and diagnostic purposes.

Organization of Remainder of Study

A review of related literature and research is given in Chapter II.

The procedures of the study are presented in Chapter III.

An analysis of the data and the findings relative to the thirteen hypotheses is presented in Chapter IV.

Chapter V consists of the summary of the study, findings and conclusions drawn from the study, and the recommendations.
CHAPTER BIBLIOGRAPHY


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CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCH

Introduction

Fostering awareness, curiosity, thoughtfulness, creativity, and other facets of intellectual and personal development were spoken of by college educators and others as ways of stimulating young people to derive the benefits a college education offered. They pointed out that the entire college environment was a stimulus to the student. Stanfiel (53) indicated that the kinds of stimulation the students received were in conjunction with the particular ways he integrated what the college offered. The effects of this stimulation were social as well as intellectual. College educators should understand what the college environment means to the students as it relates to the goals and policies of the institution. If the college educators are not aware of, and sensitive to, the students' experiences, feelings, and needs, the students may suffer from it. Ultimately, the institution also suffers.

The mushrooming college population is creating certain concerns for those persons responsible for higher education. One major concern is the drop-out rate. Administrators are constantly searching for new and better ways to reduce the
attrition rate of entering college students. Ford and Urban (16, p. 106) suggested that the phenomenon of the college dropout implied a basic flaw in the entire educational structure. The need was to develop forms of education that were appropriate for students who were highly effective as symbolic learners.

Austin stated:

To an unfortunate degree our colleges and universities continue to stand in loco parentis not so much by reason of their regulation of lives of students as by their commitment to producing the kind of person who is no longer functional in the world of today and tomorrow. Too many of our administrators and trustees, and, perhaps to a lesser extent, faculty, are self-made men who want to create in their own image the student who has a clearer and more realistic vision of what it is to be a man for his own time (2, p. 237).

Katz (27) conducted a study of several thousand college students over a four-year period. His findings and conclusions had implications for educators and administrators responsible for planning and implementing the college curriculum. He pointed out that this four-year study of college students reflected a wide variety of patterns in which these students developed and reacted during their college years. The college environment created stress in many students. Some students, however, were well-enough equipped psychologically to utilize both the opportunities and the obstacles of the college environment for their own
growth. On the other hand, there were some students whose life styles would not permit them to make their own decisions. Then, too, there were a number of students who were handicapped by inadequate self-awareness and inadequate self-assertion, as well as by their environment. As a result, their lives seldom reached an adequate expression of their potential.

Many students did not use their reasoning capacities in the service of the problems they faced in their development. A number of students were unable to make major life decisions, and to think abstractly.

Higher education seldom gives the student sufficient opportunity to develop the non-intellectual parts of his character. The development of more autonomous identity, of the capacity for intimate communication with other people, and of taking responsibility for others is not brought to the fruition that most students implicitly desire but cannot realize without further educational help (27, pp. 3-4).

Purposes of Orientation Programs

The concern for the greatly increased numbers of college dropouts lead to the rapid growth of orientation programs. Lang, Sferra, and Seymour (30), and Bradley, Strang, and Wood (3) advocated that if students' needs were met in a functional, practical way during orientation, the attrition rates would be reduced. Grier (21) pointed out that the dropout rate could be reduced if orientation programs would
help students acquire the habits or skills considered important to college work. Froe and Lee (19) suggested that orientation should bring about improved study habits and improved reading skills within the students. This view was supported by Bradley, Strang, and Wood (3) who said that if students admitted to college could read and write effectively, the transition from high school to college would not be difficult. Orientation programs should provide instruction to help overcome these difficulties for students who could not read effectively.

Crow (12) and Li (32) stated that it was difficult to develop and plan a program that would adequately prepare all students for effective transition from high school to college. They explained, however, that this transition necessitated a program for change.

Pappas (41), Hoffman (6, p. 120), Reiter (47, p. 66), Fitzgerald (15, p. 270), and Wilson (6, p. 125) indicated that favorable attitudes toward college would increase the students' receptivity to college, thereby enabling them to reach their potential. This might best be accomplished through discussions and exploration sessions led by students.

From his study, Eddy (14) concluded that if orientation was properly conducted, it would inform students of the goals of the college. In addition, it would also enhance the students' ability to understand their own goals, thereby
contributing to greater self-direction on the part of the students. Shaffer (50) and Mueller (39) also identified self-direction and assumption of responsibility as major purposes of having orientation.

It is apparently true, then, that students have unrealistic expectations from college. Stern (50) indicated that freshmen get their ideas about college from family, friends, and high school counselors. He observed that these groups may be ill-advised or misinformed, and, in some cases, may present an idealized picture of college life as an incentive for the student to work hard in high school. Students need to receive assistance in college selection, financial assistance, and assistance in other areas before they enroll in college. Murray (40) pointed out that orientation to college after arrival at college is often too late. He did indicate, however, that it is desirable to have this orientation if students have not been exposed to orientation to college in high school.

Freshman orientation programs for Negro students, according to Smith (51) demand that some special attention be given to intellective and personal-social factors which may contribute to their performance in college. For many Negro students who enroll in college, the following three basic assumptions can be made:
(1) Their academic backgrounds may be in some way impaired; (2) their social experiences have been restricted to a sub-culture in which habits may have been acquired by rules different from those of the prevailing culture; and (3) once admitted, they are capable of performing at a level indicative of the respect, dignity, and standards of the college (49, p. 176).

Pittman stated:

Many people think of the student with disabilities as a person who through negligence, or through circumstances beyond his control, graduates from high school with gaps in his knowledge and understandings—gaps which will probably make his future educational growth more difficult. We like to think also that if such a student is given an opportunity to fill in these gaps, he will do so in a reasonable amount of time and go on to do satisfactory college work (44, p. 436).

The purposes of orientation, according to Croft (11) and Corbally (10), were to aid the student in becoming acquainted with the educational goals and the physical facilities of the college. In addition, orientation would give the college a chance to evaluate the student for academic potential and personality development in relation to probable academic success.

Too many programs relative to college orientation, as pointed out by Li (32) and McCann (35), lacked academic and intellectual aspects of development. This was due to the fact that too much emphasis was placed upon social development.
The purposes of orientation, according to Guthrie (22) and Williamson (58), were to win freshmen to the intellectual life. Jones (26) explained that orientation could be conducted in a realistic manner by describing exactly what was expected of the freshmen students. This view was also supported by Hudson (24). The intellectual aspect of orientation should be presented to the freshmen in a realistic manner. Cole (6, p. 114) explained that the orientation program generally set the tone, emphasized either the intellectual or social environment of the college, and let the student know immediately what the college expected of him.

Tautfest (55) designed a questionnaire which listed criteria for orientation programs, in which students chose five topics from the list of criteria and rated them one through five in order of importance. Students selected, as the most important criteria, academic responsibilities and study habits; familiarization with the campus; intramural sports; academic program planning; handling finances in college; extra-curricular activities; and student organizations. Florida University developed a new approach to orientation based on the results of this study.

Spencer (52) used a rating scale to gather information from prospective students relative to orientation. The rating scale consisted of thirty items and was administered
to 1,091 students. A random sample of 240 students was used in the study. The students' suggestions were given to the administrators to aid them in planning a better orientation program.

**Related Literature**

Current literature describes new kinds of orientation practices aimed toward making orientation to college more meaningful and helpful to the students. In addition, special programs and innovative methods of instruction have been designed.

The Newark College of Engineering and Rutgers, the State University, in Newark, orientate their freshmen to college by means of Freshman Camp. The camp was designed primarily to provide an opportunity for students to meet on an informal basis with fellow classmates, student leaders, and college faculty members. In addition, it attempted to give the freshmen an idea about what to expect from college and what college expected from them. It also provided an opportunity for them to relax with classmates.

In attempting to provide the best possible orientation program for freshmen students, Foxley (17) explained the new, extensive orientation program at the University of Utah which began in the fall quarter of 1967. The 1967 orientation program was different from previous programs
primarily in two respects: (1) All freshmen were invited to stay on campus for two days and one night, and (2) students met in Reference Groups (small groups of fifteen to twenty members), lead by specially trained upperclassmen, during much of the two-day program.

The Reference Groups were designed to make the orientation more personal in helping students gather information about university life, making new friends, and increasing self-understanding and self-reliance. Four two-day sessions took place. During each of the two-day sessions, approximately four hours were spent with academic advising and registration; from six to seven hours were devoted to Reference Group Meetings; and about eight hours were consumed by the various educational, cultural, and social events, such as lectures, demonstrations, panel discussions, campus tours, movies, and sing-alongs. The results of this investigation supported the contention that freshman orientation does make a difference with respect to student perceptions of university environment, knowledge, and information. The differences, however, were not always in the desired direction, which pointed out that the planning and content of such programs constantly needed improving.

Seymour (49) described a summer program combining freshman orientation, counseling, and counselor preparation which
was undertaken at the University of Alabama in the summer of 1959. The program, which consisted basically of a series of intensive, three-day sessions of orientation, testing, and counseling of prospective freshmen, was expanded in the summers of 1960 and 1961. The results reported in the study suggested that this type of program provided an excellent opportunity for contributing to the preparation of counselors and a sound orientation for the students.

At the Pennsylvania State University, a remedial non-credit course, Composition Zero, attempted to prepare freshmen students scoring below a critical score on an English proficiency examination for subsequent credit courses in English. The Composition Zero course was offered to prospective freshmen the summer before their formal enrollment as well as during the regular fall semester. Students electing the Composition Zero course in the summer and passing it had an advantage in that they could pursue their regular English course work without delay in the fall. Ziegler and Herman (58) undertook a study to determine if there was any significant difference in achievement in the subsequent Composition One course between students electing Composition Zero in the summer and a matched group of students electing it in the fall. An attempt was also made to measure the efficacy of both
review courses by comparing the grades of these review
groups in Composition One with grades of a group of stu-
dents matched for general abilities, but who had been
exempted from the review course because of sufficiently
high scores on the English proficiency examination.

All subjects were drawn from the entering freshman
class of the fall of 1956. Three groups comprised the
study: Group I (the summer-review group), Group II
(the fall-review group), and Group III (the no-review
group). The three groups were compared on grades obtained
in the English Composition One courses. Members of the
groups were not necessarily in the same English One course
section, but were distributed among various sections.
The findings revealed that grades for all groups were
relatively poor; in both the summer-review and fall-review
groups, 68 percent received a "D" or lower, and in the
no-review group, 48 percent received a "D" or lower.
Although some differences in distribution of grades among
the three groups were apparent, overall differences were not
significant. It appeared that grades in Composition One of
students having taken the fall-review course did not differ
significantly from grades of those students having taken the
summer-review course. Both review courses seemed effective
in raising the English proficiency of their students close
to the level of exempted students of about equal general ability, but of initially greater proficiency in English.

Paschal (42) described Miami's six-weeks Upward Bound Project conducted in the summer of 1968. Students enrolled took courses in communications, areas relative to enrichment, mathematics, social studies, and physical education. The program was designed to stimulate the intellectual qualities and attitudes necessary for success in post-secondary education.

Sheedy (6, p. 131) stated that adjustment to college for many students was dependent upon the successful introduction of freshmen to the intellectual life of the campus. More emphasis upon academic responsibilities and intellectual growth during orientation, according to McCune (37), was needed. Dawson (13) felt that the first week of school was the most important. As a result of the study undertaken by him, a new approach to orientation at Adrian College was developed. "Freshmen Welcome Days" was a week-long program for freshmen and their parents. The main activity of the week was two days and two nights of camping for the freshmen students. Bonner (5) concluded in his study that students' adjustment to college was hindered when parents attended orientation. Grier (21) contended that freshmen camps were outdated.
Related Research

If colleges are to plan effectively for a diverse population of students, they must have some idea of what the students are like. The purpose of a survey-type study undertaken by Proe (18) was to collect information that would facilitate a systematic description of a population of college freshmen (predominantly Negro) usually described as "culturally disadvantaged," and to compare this profile with that of a population of freshmen enrolled in predominantly white higher educational institutions.

Higher educational institutions enrolling students largely from sub-cultures which represent social, educational, and economic disadvantages must deviate in many respects from plans made by colleges enrolling students having experience, prior to college, a fuller participation in the broader American Culture. Students enrolled in predominantly Negro higher educational institutions have experienced severe restrictions in the broader American culture. This restricted cultural participation requires a "compensatory" type of planning which will remove or minimize the gaps between the advantaged and disadvantaged student populations (18, p. 370).

The data presented in the aforementioned study have significant implications for curriculum planning and should be carefully analyzed by administrators and educators responsible for planning for higher education. Butzow (7), in his investigation, sought to determine if a difference in the freshman college achievement of graduates of both private religious oriented and public high schools could
be shown. The samples of students selected from each group, however, displayed no significant differences in grade-point indices at this educational level. Comparisons of aptitude and social class demonstrated the same characteristics for both groups. Interpretation of these data would suggest a great similarity in the collegiate aptitude and ability of students from both types of institutions. The students were selected from enrolling freshmen in September, 1962, at Nazareth College of Rochester.

Berry and Jones (4) conducted a study concerned with the performance of two groups of freshmen students on the California Test of Mental Maturity and the relationship of their grades to their scholastic status. The subjects were students from Grambling College and were considered in two discrete groups: (1) Forty-four with grade-point averages during the second semester of 2.00 or above, and (2) sixty-one whose grade-point averages at the end of the second semester were low enough to place them on probation. The courses considered in this study were required of all students graduating from Grambling College and were normally taken during the freshman year.

The findings revealed that approximately 58 percent of the probates made raw scores on the Total test that were less than the lowest raw score made by any of the honor students and approximately 29 percent of the honor students
made raw scores higher than the highest raw score made by a probate. Not only did honor students make higher scores on the Total test, but they made higher scores on each part of the test. For both probates and honor students, the coefficients of correlation between grade-point averages and scores on the California Test of Mental Maturity failed to attest statistical significance. Negative correlations between the grade-point averages and the scores of probates on the Total test and the Language section suggested that the scores on the two sets of data tended to reverse their rank order. This was taken to mean that, generally speaking, those probates who scored highest on the Total and Verbal sections of the California Test of Mental Maturity tended to earn the lowest grade-point average, and vice versa.

The obtained coefficients of correlation between the grade-point averages and the scores made by honor students on the Total test and the Language and Non-Language sections of the test were positive. This suggested that those honor students who scored highest on the California Test of Mental Maturity tended to earn the highest grade-point average and vice versa.

The purpose of the research undertaken by McConine, Prien, and Svetlik (36) was to determine the effects of the Preparation-for-College program, a non-credit program
established at Western Reserve University, in three separate areas: (1) reading skills, (2) effectiveness of expression, and (3) work habits. The program lend itself to the pre- and post-test design without a control group. Since the program involved extended daily participation of a full four weeks, it was assumed that during this period of time students did not participate in any other type of activity which might have affected the dimensions measured by the pre- and post-tests. The measurement used to evaluate skill in handwritten materials (reading) was the Cooperative English Test C2 Reading, Forms T and Z. The measurement of skill in written expression was a graded theme. Common subject-matter topics were assigned at the beginning of the program and at the end of the program. The measure of work habits relative to the student's role was a questionnaire of fifteen items to which the student responded on an "agree-disagree" scale. The results of pre- and post-test evaluations were measured by using the t-test of differences between means. The measures of reading skill and written expression were one-tailed tests while the difference between questionnaire item means were two-tailed tests. The purpose of the total experience was to develop techniques, not knowledge, in the various academic disciplines. The results of this research indicated that the Preparation-for-College
had a positive effect upon some of the skills related to performance that was required of the college student.

A study was undertaken by Cates (8) to determine the statistical relationship between the academic performance of freshmen students who did and did not participate in a summer program of academic counseling at Texas Technological College. The component populations were undergraduate schools and men and women in the Schools of Arts and Sciences and Business Administration. He found that the students who attended the academic counseling program earned significantly higher grade-point averages than did those who did not participate.

The effectiveness of a faculty advising program for 226 freshmen in the Electrical Engineering Department at North Carolina State College was explained by Patty (43). It was found that the experimental groups received a more formal and extensive program of advising, each member attending two group meetings and two individual meetings with advisers. The control group had only one group meeting during orientation week for scheduling classes, and only those students with mid-semester failures were to come in for conferences. The results of this study suggested that more formal and continuous advising programs were desirable. The experimental group had a higher grade-point average for the spring semester and for the full academic year than the
control group, though the differences between the two groups at the end of the fall semester was less significant. The experimental group showed a slightly smaller number of dropouts (8 percent as compared to 11 percent), but the control group dropouts had a significantly higher predicted grade-point average than the experimental group dropouts. Finally, a significantly higher proportion of the experimental group than the control group were high achievers.

Taylor (56) investigated the effects of a week-long mathematics workshop on first quarter grades of entering engineering students at the University of Minnesota. He attempted to examine the effects of the workshop on attrition rates of the workshop group with those of the control group. The mathematics workshop group obtained significantly higher mathematics grades than did the control group. The attrition rates of the workshop group were considerably lower than the control group, and there was a higher percentage of workshop students with a 2.00 cumulative grade-point average after one year.

Another attempt to acquaint the students with what to expect from college was investigated by McCandless (34) as he studied the guidance-structured program at Texas Agricultural and Mechanical College Adjunct at Junction, Texas. These students were compared with students enrolling
at the main campus of Texas Agricultural and Mechanical College during the summer session. The two groups studied were comparable on the basis of scholastic aptitude, reading ability, English proficiency, and previous academic performance. The data show that the Adjunct and main campus groups did not differ to a significant extent in any of these variables. He concluded that the type of guidance-structured beginning program explained could not be justified as much on the basis of improved grade-point average as on the basis of improved retention.

A summer orientation program at the University of Colorado was designed to orient students as well as their parents to college life. Hause (23) explained that the students were tested during the summer orientation program. In addition, they participated in campus tours, had sessions with housing directors, and listened to speeches aimed at presenting an academic challenge. The parents attended informal meetings where their questions were answered by a panel of university faculty and staff members. The academic objectives of the college were emphasized during these meetings.

The administrative council at Morgan State College conducted a two-week orientation program prior to the fall semester at the college. Faculty members provided instruction to a group of freshmen students who were required to attend
freshmen orientation. In order that faculty members could become familiar with the materials of the new program, in-service training sessions were held.

Testing was administered simultaneously to approximately 450 students. Small groups were formed. The small group discussion seminars were composed of seven students plus a faculty member who served as a leader. Individualized instruction was given in these small group sessions. As reported by Froe and Lee (19), the students received approximately two hours of instruction in each area relative to study techniques, how to take tests, study types of reading exercises, and use of the library. The results indicated that the students gained significantly in five of the eight skills measured. The gains indicated, however, that these students still remained relatively low in reading skills. It was concluded that the elementary and secondary schools were going to have to assume a greater share of responsibility in identifying skills basic to academic work.

A study was undertaken at the University of Mississippi relative to entering freshmen of 1961-1962. McDonald (38) reported that the study extended to the academic achievement of the students as well as the disposition of the groups based on scores which they earned on the American College Test (ACT).
Keetz (28) evaluated the effect of a reading and study skills course required of selected college freshmen enrolled in scientific curricula on their performance in certain reading and study abilities and academic achievement. The effectiveness of the reading and study skills was determined by comparing the performance of the experimental and control groups with respect to (1) level of comprehension of general-type material as measured by the Davis Reading Test; (2) speed of comprehension of general-type material as measured by the Davis Reading Test; (3) comprehension of scientific material as measured by the Interpretation-Natural Sciences Test; (4) ability to read and study a textbook assignment as measured by the "Informal Reading and Study Test," which was specially constructed for the study by the investigator; (5) second semester grade-point average in verbal courses; and (6) second semester grade-point average in quantitative courses. Analysis of the data revealed no significant differences between the two treatment groups, the three verbal aptitude levels, or the interaction of the treatment and levels with respect to performance in certain reading and study abilities and academic achievement in verbal and quantitative-type courses.

In a study and comparison of a summer field biology course with a traditional classroom biology course, Leach (31)
reported that the students in field study did as well as students in traditional classes. Students in field classes did significantly better on tests of reasoning with biological information. Conclusions drawn from the study indicated that field biology could be as effective as traditional biology; it was economically feasible to offer field biology in a camping situation; field work was safe with reasonable supervision and precaution; clean personal habits could be maintained in camp; and there were many intangible benefits derived from this experience in outdoor education.

In a study of a summer high school with a comparative analysis of academic achievement in a summer high school and the regular school, Copley (9), in using the analysis of covariance procedure, revealed that there was no significant difference at the .05 level of confidence in academic achievement between students in the summer school and students in the regular high school in all areas of the study except economics. Students' achievement in economics during the regular school (September through May) was significantly superior than in the summer high school.

Plante (45) described the experimental freshman program in the Humanities at Thomas More College, Fordham University. The scheduling of classes was predetermined in a very loose fashion, and then adjusted to meet the need
of the students as they began to work with the faculty.
Class meetings usually varied from nine to thirteen hours
a week and students met in class sizes which ranged from
fifteen to seventy-five. The entire group of students
was occasionally given the experience of lectures once
a week. Hence, every fifth meeting was with the same
small group. There was no compulsory class attendance,
though it was hoped that the professors would know their
students well enough to become concerned with those who
were frequently absent.

Trends in Orientation Programs

A study conducted by Ludeman (33) indicated that two
trends of orientation are becoming more prevalent today.
One trend is toward a more distributed orientation pro-
gram than a concentrated program. The other trend is the
inclusion of the faculty in planning, implementing, and
evaluating an orientation program.

Hause (23) and several other writers stated that one
of the most recent trends for orienting students to college
was to take college orientation into the high schools.
Bradley, Strang, and Wood (3) felt that having orientation
in the high school would enable the orientation staff to
better counsel the students and determine if they met the
requirements for college entrance. A night course to orient
high school seniors to college was advocated by Murray (40)
to enable them to better plan for college and to facilitate their adjustment to college life. One real advantage of high school orientation, according to Ausk (1), was that it helped students to decide if they should attend college. Goodrich (2) found that students' adjustment to college and grades improved if orientation was offered in the high schools. Research studies pointed out that more emphasis was being placed on the length and depth of college orientation programs and college curricula. Korn stated:

> For black students, the discrepancy between individual needs and institutional requirements reaches tragic proportions. For the white student the curriculum appears to have face validity; the average white student has been taught that he should find the history of Western Civilization, English literature, etc., interesting. Many black students find this an unwarranted assumption and are demanding more courses that emphasize Afro-American culture. Some educators find hope intrinsic in the very problem (29, pp. 159-160).

The system of higher education must be understood within the framework of contemporary society. In a like manner, the black student must also be understood in the context of the society which has, for so long, failed to provide him with appropriate educational experiences and facilities. The long-sought desire of integration into the mainstream of American society now seems to many black Americans to be too slow and filled with too many disappointments. A sense of identity and a basis for self-respect
are now being pursued through a visible Afro-American culture. Higher education, unprepared to deal with the culturally disadvantaged student in its traditional curriculum, is now being avalanched with demands for a new kind of curriculum.

In addition to the current trends in orientation, some writers felt that students who attended freshmen orientation programs should be given academic credit. Pappas (41) and Ivey (25) concluded that orientation programs designed to inform students about careers and college life should offer academic credit.

Chapter Summary

Administrators are constantly searching for new and better ways of reducing the attrition rate of entering college freshmen. Their concern for the greatly increased numbers of college dropouts had a profound effect on the rapid growth of orientation programs. Researchers indicated that the attrition rates would be reduced if students' needs were met in a functional and practical way during orientation. Orientation programs, they point out, should bring about improved study habits and improved reading skills within the students. In addition, orientation program should provide instruction to help overcome these difficulties for students who could not read effectively.
Studies related to this research have dealt primarily with innovative orientation programs which differed from traditional ones. More emphasis was being placed on the length and depth of college orientation programs and curriculums. A review of the literature indicated that, for the most part, these programs have been relatively successful. Most of these studies were conducted after the conclusion of the program. The literature suggested that longitudinal and follow-up studies should be made in order to make a more valid assessment and evaluation of the orientation programs. This study, therefore, was not only necessary, but also direly needed and justified.
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CHAPTER III

PROCEDURES OF THE STUDY

Introduction

The purpose of this chapter is to present the procedures used during the investigation of the academic performance of two groups of entering college freshmen. The following topics are presented: (1) selection of students; (2) background of students; (3) selection of the measuring instruments; and (4) treatment of the data.

Permission for undertaking the study was requested by the researcher and authorization was granted by the President of Jarvis Christian College, Hawkins, Texas. This authorization included access to student files and records.

This study was concerned with two groups of students: one group that participated in an eight-week college preparatory and enrichment program and one group that was invited to participate in the program but did not participate. The significance and need for this study rested primarily on the analysis and comparison of the success of these students in college. From an instructional point of view, it was important to discover whether students who participated in the CRAM program differed significantly from those students who did not participate in the program. The need for the
study was enhanced because findings involving both groups might lead to improvement in teaching methods, selection of students, and areas in which students' strengths and weaknesses could be recognized. In addition, the findings might serve predictive, screening, counseling, and diagnostic purposes.

In an attempt to orient its prospective students to college life, Jarvis Christian College invited prospective college freshman students to participate in an eight-week summer preparatory and enrichment program (CRAM). The underlying philosophy behind this program was that "qualified college students sometimes failed in their freshman year because of inadequate preparation for college level work, poor study habits, inadequate motivation, low aspiration, and poor personal adjustment (11, p. 2)." The program proposed to ascertain whether the failures, academic and personal, of capable freshmen to measure up to the demands of college work could be remedied by a preparatory clinic of some eight weeks. The clinic was supplemented by off-campus directed visits, experience trips, and guided tours. It was believed that the program would compensate for economic and environmental deprivations and allow many capable high school graduates to enter college and to experience optimum academic achievement without initial
setbacks usually experienced by the freshmen for whom this program was designed.

Regardless of the cause of student failures—academic or otherwise—they leave a trail of tragedy for the students, parents, and the institutions. As for the students involved, they usually make no further attempts at higher education. Parents suffer lost investment in the students in addition to embarrassment. The college faces the tragedy of increased cost of recruitment, lower achievement of its products, and failure to adequately meet the needs of all of its students.

The program attempted to substantially improve the students' chances for success during the vital freshman year by smoothing the high school-college transition by

1. stressing fundamentals that most frequently caused difficulty;
2. giving students a feel for college;
3. helping students assume personal responsibility for control of their behavior;
4. helping students to understand the differences in the quality and quantity of work at the college level as compared with the high school level;
5. helping students overcome defects and limitations in their study habits and attitudes; and
6. helping students raise their level of aspiration and cultural appreciation (11, pp. 2-3).

Some of the major program emphasis of CRAM included freshman testing, freshman orientation, research projects, convocation, reading, college preparatory courses, group discussions, residence halls, cultural and recreational
activities, and health services. A brief description of each aspect of the program is described.

**Freshman Testing**

Each participant was given several standardized tests (The School and College Ability Test, the California Test of Personality, the Nelson-Denny Reading Test, and the Kuder Preference Record, Personal and Vocational). The American College Test (ACT) was given to those students who had not taken the test during their senior year in high school.

**Freshman Orientation**

The following topics constituted the orientation course emphasis:

- a. Personal adjustment
- b. Orientation to college environment
- c. Planning study and recreation
- d. Note-taking and note-keeping
- e. Basic textbook study methods
- f. Using the college library
- g. Examination skills
- h. Writing skills
- i. Speaking skills
- j. Reading skills
- k. Counseling
Research Project

The research project was designed to teach students the correct procedure for preparing various written assignments with proper collection of material, appropriate organization, proper documentation, and other such needed exposure. The research project and/or term paper was short, stressing and implementing correct procedure and practice.

Mid-Summer Freshman Convocation

The evening convocation program was designed to be one of expression and exceptional challenge with both students and non-students participating. The convocation served as an appraisal of the rapport which existed as determined by group planning and group performance.

Reading

Reading was an undergirding emphasis. It was felt that such an emphasis would enhance the appreciation for use of the library. A reading list and a simple form for recording one's reading was used.

Courses

The courses consisted of College Preparatory English, College Preparatory Mathematics, College Preparatory Reading, and College Preparatory Speech and Aesthetic Appreciation. Personal, Social, and Cultural Adjustment was also included.
Group Discussions

Small group discussions were encouraged on various topics and current affairs, both national and international. Book reviews were also included. This involved faculty, staff, and students.

Residence Halls

A personnel report was prepared by the dormitory directors on each student. The report was designed to serve as an aid in getting to know and understand the students better.

Cultural and Recreational Activities

To facilitate and to complement the optimum academic adjustment, a series of cultural and recreational enrichment activities were planned. This included on-campus social affairs and organized recreational programs. Directed visits, experience trips, and guided tours made up the off-campus enrichment activities which were designed for purposes of information and perhaps more important, inspiration. A partial list of the establishments and activities involved included visits to the following:

a. Wholesale Drug and Food Companies
b. Refineries
c. Wholesale Merchandising Companies
d. Stage Productions
e. Industries
f. Modern Hospitals
g. Meat Packing Plants
h. Federal Reserve Bank
i. TV and Radio Stations
j. Large Post Offices
k. Newspaper and Printing Establishments
l. National Aeronautics and Space Administration
m. Military Installations
n. State Legislature in Session
o. City Council in Session
p. Astrodome

Health Service

The health aspect of the program was designed to prevent and control illnesses and to maintain a high level of fitness among the student body. This would enable the students to meet their academic responsibilities and to pursue their co-curricular activities more effectively (11, pp. 3-4, 15).

Selection of Students

The subjects used in this study were fifty male students and fifty female students who completed two consecutive semesters of college work at Jarvis Christian College, Hawkins, Texas, during the 1969-70 school year. All of
the subjects were freshman students who completed their high school training in May, 1969. Students who transferred from another college or who were returning freshmen from prior years were excluded from the study to eliminate the chance that previous college experience on the part of the subjects might affect the outcome of the study.

A list of CRAM students and students who withdrew from the CRAM program prior to its termination in August, 1969, was obtained from the office of the Dean of Student Affairs. These lists were used to determine the names of the students as well as the number of students enrolling for the following semesters. Additional statistical data were obtained from the office of the Registrar. This information consisted of the following items:

1. Date of graduation from high school
2. Previous colleges attended
3. High school grades
4. Students' home state
5. Number of freshman students enrolled for the first semester
6. Number of freshman students enrolled for the second semester
7. Names of freshman students enrolled for the first semester
8. Names of freshman students enrolled for the second semester
Three lists were then made for comparative purposes. These lists were as follows:

1. CRAM students enrolled in the CRAM program beginning June, 1969;

2. Freshman students who entered Jarvis for the first time in September, 1969; and


The CRAM list of students was checked against the entire list of students who enrolled for the first semester at Jarvis Christian College. Students who had participated in the CRAM program were so designated. Records were checked in the Registrar's Office for names of freshman students who did not participate in the CRAM program to determine their date of graduation from high school. Freshman students who were transferees or who had attended Jarvis previously were eliminated from the study. Students who had not attended college previously but who had graduated from high school prior to May, 1969, were also eliminated from the study.

For the second semester, CRAM students who re-enrolled were so designated as well as the freshman students who did not participate in the CRAM program. Incoming freshman
students, transferees, returning students, and students who completed their high school training prior to May, 1969, were eliminated from the study.

After the final lists were made, twenty-five male students and twenty-five female students were selected at random. These students were designated as CRAM participants and composed the experimental group. Twenty-five male students and twenty-five female students who did not participate in the CRAM program were selected at random. These students were designated as non-CRAM participants and composed the control group. The total number of female participants in the study was fifty; the total number of male participants was fifty. There were two groups composed of fifty students each, and the total number of students involved in the study was 100.

Background of Students

In June, 1969, 137 students enrolled in the CRAM program. Of this number, 79 were female students and 58 were male students (6). Prior to the end of the program in August, 1969, sixteen students withdrew from the CRAM program for various reasons. Some of the reasons given were personal, lack of adjustment to college life, suspension, transferred to another college, and disciplinary. These data are presented in Table I.
<table>
<thead>
<tr>
<th>Reason for Withdrawal</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
</tr>
<tr>
<td>Personal, Unofficial</td>
<td>1</td>
</tr>
<tr>
<td>Lack of Adjustment to College Life</td>
<td>3</td>
</tr>
<tr>
<td>Personal, Official</td>
<td>2</td>
</tr>
<tr>
<td>Attended Funeral; Did not Return</td>
<td>..</td>
</tr>
<tr>
<td>Suspended for Remainder of Program</td>
<td>2</td>
</tr>
<tr>
<td>Disciplinary</td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
</tr>
<tr>
<td>Transferred</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
</tr>
</tbody>
</table>

Of the total number of students enrolled in the CRAM program, sixteen, or 12 percent, dropped out of the program prior to August, 1969, for various reasons. One withdrew for personal reasons, unofficially; four for lack of adjustment to college life; two for official personal reasons; one to attend the funeral of an aunt and did not return; two were suspended; one was dismissed; four left for reasons unknown; and one student transferred. Those students who withdrew included five male students and eleven female students.
In September, 1969, the freshman class enrollment was 225 students (7). Of this number, twenty-four were returning freshmen; four were transfer students; eighty-nine were students who had not attended college previously; and 108 were students who had participated in the CRAM program. Sixteen students dropped out of the program prior to the end in August, 1969. Of the total number of students completing the CRAM program, thirteen did not re-enroll. The two students who were suspended for the remainder of the CRAM program and the student that transferred to another college re-enrolled the first semester.

Prior to the end of the first semester, six freshman students withdrew from college. These data are shown in Table II.

**TABLE II**

**FRESHMAN STUDENT WITHDRAWALS FOR FIRST SEMESTER, 1969-70**

<table>
<thead>
<tr>
<th>Reason</th>
<th>CRAM</th>
<th></th>
<th>Non-CRAM</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
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<tr>
<td>Illness in Family</td>
<td>1</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>Personal</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>2</td>
</tr>
<tr>
<td>Unknown</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>1</td>
</tr>
<tr>
<td>Mental Depression</td>
<td>2</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>..</td>
<td>..</td>
<td>3</td>
</tr>
</tbody>
</table>
As can be seen from Table II, one student withdrew from college because of illness in family; two for unknown reasons; two from mental depression; and one for personal reasons. Three students were CRAM participants and three students were non-CRAM participants. The three CRAM participants withdrawing from college were all male students; the three non-CRAM participants withdrawing were all female students.

At the end of the first semester, there were 105 CRAM students and eighty-six non-CRAM students, making a total of 191 students still enrolled from the freshman class. Twenty-eight of the total freshman class enrollment was not included in this number (twenty-four returning freshmen and four transfer students).

In January, 1970, the freshman class enrollment was 220 (8). Of this number, forty-two had not attended college previously; two were transfer students; nine were returning freshmen; and 167 freshmen students re-enrolled. Of this number, ninety-seven had participated in the CRAM program and seventy had not participated in the CRAM program. An analysis of the class enrollment revealed that twenty-four students enrolled for the first semester and completing the semester did not re-enroll for the second semester. Of these students not re-enrolling, eight were CRAM students and sixteen were non-CRAM students.
Prior to the end of the second semester, twenty-one freshman students withdrew from college. Reasons for these withdrawals are indicated in Table III.

**TABLE III**

**FRESHMAN STUDENT WITHDRAWALS FOR SECOND SEMESTER, 1969-70**

<table>
<thead>
<tr>
<th>Reason</th>
<th>CRAM</th>
<th></th>
<th>Non-CRAM</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td>Personal</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Illness</td>
<td>..</td>
<td>1</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>8</td>
<td>4</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>

Table III shows that twelve CRAM participants withdrew from college prior to the end of the second semester. Eight were male students and four were female students. Of the nine non-CRAM participants withdrawing from college, seven were male students and two were female students. Of all students withdrawing from college, fifteen were male students and six were female students.

Students participating in the study were primarily from the Southern states. Other states represented were California, Illinois, Indiana, Missouri, and New York. The distribution of CRAM students by states is given in Table IV.
TABLE IV

DISTRIBUTION OF CRAM STUDENTS BY STATES

<table>
<thead>
<tr>
<th>State</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>13</td>
</tr>
<tr>
<td>Arkansas</td>
<td>5</td>
</tr>
<tr>
<td>California</td>
<td>1</td>
</tr>
<tr>
<td>Illinois</td>
<td>1</td>
</tr>
<tr>
<td>Indiana</td>
<td>1</td>
</tr>
<tr>
<td>Louisiana</td>
<td>6</td>
</tr>
<tr>
<td>Mississippi</td>
<td>2</td>
</tr>
<tr>
<td>Texas</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

As can be seen from Table IV, 26 percent of the CRAM students were from Alabama; 10 percent were from Arkansas; 2 percent were from California; 2 percent were from Illinois; 2 percent were from Indiana; 12 percent were from Louisiana; 4 percent were from Mississippi; and 42 percent were from Texas.

Most of the non-CRAM students, too, were from the Southern states. Students were from Alabama, Arkansas, Louisiana, and Texas. In addition, a few students were from Indiana, California, Missouri, and New York. The number of non-CRAM students from the various states is given in Table V.
## TABLE V
**DISTRIBUTION OF NON-CRAM STUDENTS BY STATES**

<table>
<thead>
<tr>
<th>State</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>9</td>
</tr>
<tr>
<td>Arkansas</td>
<td>5</td>
</tr>
<tr>
<td>California</td>
<td>3</td>
</tr>
<tr>
<td>Indiana</td>
<td>1</td>
</tr>
<tr>
<td>Louisiana</td>
<td>5</td>
</tr>
<tr>
<td>Missouri</td>
<td>1</td>
</tr>
<tr>
<td>New York</td>
<td>1</td>
</tr>
<tr>
<td>Texas</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50</td>
</tr>
</tbody>
</table>

Eighteen percent of the non-CRAM students were from Alabama; 10 percent were from Arkansas; 6 percent were from California; 2 percent were from Indiana; 10 percent were from Louisiana; 2 percent were from New York; and 50 percent were from Texas.

Of the total number of students participating in the study, 22 percent were from Alabama; 10 percent were from Arkansas; 4 percent were from California; 1 percent was from Illinois; 2 percent were from Indiana; 11 percent were from Louisiana; 2 percent were from Mississippi; 1 percent was from Missouri; 1 percent was from New York, and 46 percent were from Texas.
The high school grade averages of CRAM students are given in Table VI. Students enrolling in college had high school grade averages of A, B, C, and D.

**TABLE VI**

**HIGH SCHOOL GRADE AVERAGES OF CRAM STUDENTS**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>5</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>C</td>
<td>15</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>D*</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>25</td>
<td>50</td>
</tr>
</tbody>
</table>

*Students admitted conditionally

As shown in Table VI, 4 percent of the CRAM male students had high school grade averages of A, and four percent of the CRAM female students had high school grade averages of A. Ten percent of the CRAM male students had high school grade averages of B, and 24 percent of the female students had high school grade averages of B. Thirty percent of the CRAM male students and 20 percent of the CRAM female students had high school grade averages of C. Six percent of the CRAM male students and 2 percent of
the CRAM female students had high school grade averages of D and were admitted conditionally.

Of the total number of CRAM participants enrolling in college, eight percent had high school grade averages of A; thirty-four percent, B; fifty percent, C; and eight percent, D. Students with high school grade averages of D were admitted conditionally.

Non-CRAM students enrolling in college had high school grade averages of A, B, C, and D. The distribution of these grades is given in Table VII.

**TABLE VII**

**HIGH SCHOOL GRADE AVERAGES OF NON-CRAM STUDENTS**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>C</td>
<td>15</td>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>D*</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>25</td>
<td>50</td>
</tr>
</tbody>
</table>

*Students admitted conditionally

Of the total number of non-CRAM participants, 6 percent had high school averages of A. Thirty-two percent had high school averages of B. Fifty-four percent had high school grade averages of C. Eight percent had high school
grade averages of D. These students were admitted to college conditionally.

Information relative to the major areas of study selected by CRAM students is given in Table VIII. The number of CRAM students selecting each area is also shown.

**TABLE VIII**

**MAJOR AREAS OF STUDY SELECTED BY CRAM STUDENTS**

<table>
<thead>
<tr>
<th>Major Area of Study</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>2</td>
</tr>
<tr>
<td>Business Administration</td>
<td>15</td>
</tr>
<tr>
<td>Business Education</td>
<td>5</td>
</tr>
<tr>
<td>Chemistry</td>
<td>1</td>
</tr>
<tr>
<td>Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td>English</td>
<td>4</td>
</tr>
<tr>
<td>History</td>
<td>5</td>
</tr>
<tr>
<td>Mathematics</td>
<td>2</td>
</tr>
<tr>
<td>Music</td>
<td>1</td>
</tr>
<tr>
<td>Physics</td>
<td>1</td>
</tr>
<tr>
<td>Secretarial Science</td>
<td>5</td>
</tr>
<tr>
<td>Social Science, Integrated</td>
<td>2</td>
</tr>
<tr>
<td>Sociology</td>
<td>2</td>
</tr>
<tr>
<td>Undecided</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>
Distribution of students by major areas of study as shown in Table VIII revealed that thirty percent of the CRAM students selected business administration as a major. Two percent of the students selected chemistry, two percent selected music, and two percent selected physics as a major.

Non-CRAM students selected various areas of study. These data are given in Table IX.

<table>
<thead>
<tr>
<th>Major Areas of Study</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>3</td>
</tr>
<tr>
<td>Business Education</td>
<td>4</td>
</tr>
<tr>
<td>Business Administration</td>
<td>9</td>
</tr>
<tr>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>Elementary Education</td>
<td>5</td>
</tr>
<tr>
<td>English</td>
<td>7</td>
</tr>
<tr>
<td>History</td>
<td>5</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Music</td>
<td>2</td>
</tr>
<tr>
<td>Secretarial Science</td>
<td>5</td>
</tr>
<tr>
<td>Sociology</td>
<td>1</td>
</tr>
<tr>
<td>Undecided</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
</tr>
</tbody>
</table>
Business administration was the major area of study selected by eighteen percent of the students. Two percent of the students selected sociology as a major area of study.

Selection of Measuring Instruments

Data were available for all students who participated in the CRAM program and for all entering freshmen students. The Nelson-Denny Reading Test, Form A, was administered to each participant in the CRAM program in June, 1969, and to each incoming freshman student in September, 1969.

As reported in the Sixth Mental Measurements Yearbook (2, p. 1080), unusually complete normative data are given for the test. Reliabilities of the test, which were based upon a carefully conducted study of 100 college students, seem to be adequate for both general screening purposes with the total scale and diagnostic work with the subscales. Reliability for Reading Rate, Vocabulary, and Total score are acceptably high (.92 to .93) and Comprehension is .81. The validity data on the test indicates that it can be used to identify differential difficulties in vocabulary and comprehension. The correlation between Nelson-Denny and scholastic achievement is in the .40's, a well-constructed and excellently standardized measure which can confidently be recommended to counselors.

The School and College Ability Test, Form 1C, was administered to each participant in the CRAM program in June, 1969.
The same test was also administered to each incoming freshman student in September, 1969. Anastasi stated:

In view of the stated purpose for which the SCAT was developed, its predictive validity against academic achievement is of prime relevance. A limited number of studies at elementary, high school, and college levels have so far yielded correlations in the .50's and .60's with grades and correlations in the .60's with achievement scores (1, p. 231).

SCAT can be used to help make predictions about a student's probable academic performance for at least the following two years. The Sixth Mental Measurements Yearbook reports:

The validity of the tests as aids for such predictions at least from grade 5 up, has been well demonstrated by a considerable number of research projects. Correlations between SCAT scores and either grade-point average (GPA) or specific courses appear to be highest at about grade 7, ranging in the .70's and up for prediction of seventh grade math and English grades, and GPA. Prediction of college freshmen GPA appears to range from about .4 to .6. These validities compare quite favorable with those obtained with other tests (2, p. 716).

The Technical Manual for the Cooperative School and College Ability Tests reported that the validity of the tests was sufficiently high to be useful as predictors of academic success (4, pp. 5-7). The internal consistency of the total test is about .95 for each level (2, p. 717), which attests to its reliability.

High school grades, major areas of study, first semester grade-point averages, second semester grade-point averages, and cumulative grade-point averages were obtained
College Ability Test, Form 1C, were obtained from the Dean of Student's Office. The two groups were compared on each of the following variables:

1. Sex
2. School and College Ability Test, Total scores
3. Nelson-Denny Reading Test, Total scores
4. First Semester Grade-Point Averages
5. Second Semester Grade-Point Averages
6. Cumulative Grade-Point Averages

Treatment of the Data

School and College Ability Test, Total scores, Nelson-Denny Reading Test, Total scores, first and second semester grade-point averages, and cumulative grade-point averages were compiled. These data were then transferred to IBM cards for computation at the North Texas State University Computer Center, Denton, Texas, on the IBM 360 Computer. Each student was identified by sex, group number, and an identification number. Each hypothesis was treated in the null form by use of Fisher's \( t \) to test significant differences between means. The research hypotheses were accepted at the .05 level of significance.

Chapter Summary

The subjects used in this study were fifty male students and fifty female students who completed two consecutive semester of college work at Jarvis Christian College. The
100 students were subdivided into two groups: experimental and control. Students who had participated in the summer preparatory and enrichment program (CRAM) comprised the experimental group, and the students were designated as CRAM participants. Students who were invited to participate in the program and did not participate comprised the control group, and the students were designated as non-CRAM participants. There were twenty-five male students and twenty-five female students in each group, making a total of fifty students per group. A total of 100 students were involved in the study.

The School and College Ability Test, Form 1C, and the Nelson-Denny Reading Test, Form A, were administered to each CRAM participant in June, 1969. The same forms of the tests were administered to each incoming freshman student in September, 1969.

Information relative to students enrolled in the CRAM program and test scores on the Nelson-Denny Reading Test and the School and College Ability Test was obtained from the office of the Dean of Students. Statistical data pertaining to freshman class enrollment; date of graduation from high school; grade-point averages; home state; high school grade average; and major areas of study were obtained from the office of the Registrar. Subjects used in the study were compared on the following variables:
1. Sex
2. School and College Ability Test, Form 1C, Total Scores
3. Nelson-Denny Reading Test, Form A, Total Scores
4. First Semester Grade-Point Averages
5. Second Semester Grade-Point Averages
6. Cumulative Grade-Point Averages

Data were compiled and information transferred to IBM cards for computation at the North Texas State University Center, Denton, Texas. The statistical technique used was Fisher's t to test significant differences between means. The research hypotheses were accepted at the .05 level of significance.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

ANALYSIS OF DATA

Purpose

The purpose of this chapter is to present an analysis of the data which were secured to test the following hypotheses:

1. There would be no significant difference between mean test scores of CRAM students and non-CRAM students with respect to the School and College Ability Test.

2. There would be no significant difference between mean test scores of CRAM female students and non-CRAM female students on the School and College Ability Test.

3. There would be no significant difference between mean test scores of CRAM male students and non-CRAM male students on the School and College Ability Test.

4. There would be no significant difference between mean test scores of CRAM students and non-CRAM students on the Nelson-Denny Reading Test.

5. There would be no significant difference between mean test scores of CRAM female students and non-CRAM female students on the Nelson-Denny Reading Test.
6. There would be no significant difference between mean test scores of CRAM male students and non-CRAM male students on the Nelson-Denny Reading Test.

7. There would be a significant difference between mean grade-point averages of CRAM students and non-CRAM students relative to academic performance as determined by teacher-assigned semester marks.

8. There would be a significant difference between mean grade-point averages of CRAM female students and non-CRAM female students relative to academic performance as determined by teacher-assigned semester marks.

9. There would be a significant difference between mean grade-point averages of CRAM male students and non-CRAM male students relative to academic performance as determined by teacher-assigned semester marks.

10. There would be a significant difference between mean cumulative grade-point averages of CRAM male students and non-CRAM male students.

11. There would be a significant difference between mean cumulative grade-point averages of CRAM female students and non-CRAM female students.

12. There would be a significant difference between mean cumulative grade-point averages of CRAM students and non-CRAM students.

13. The college drop-out rate for CRAM students will be lower than the drop-out rate of non-CRAM students.
In order to compare the groups on the five variables—School and College Ability Test scores, Nelson-Denny Reading Test scores, First Semester Grade-Point Averages, Second Semester Grade-Point Averages, and Cumulative Grade-Point Averages—each hypothesis (except Hypothesis 13) was treated in the null form. Fisher's t-test was the statistical procedure used. The research hypotheses were accepted at the .05 level of significance. Hypothesis 13 was reported in terms of numbers and percentages.

Findings Relative to Hypotheses

Hypothesis 1.—It was hypothesized that there would be no significant difference between mean test scores of CRAM students and non-CRAM students with respect to the School and College Ability Test. The results of this comparison are shown in Table X.

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>50</td>
<td>278.5398</td>
<td>12.6097</td>
<td>3.8895</td>
<td>SD*</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>50</td>
<td>269.5398</td>
<td>10.1790</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant difference.
When CRAM students were compared with non-CRAM students on the School and College Ability Test, a significant difference was found in favor of the CRAM group. The mean score for the CRAM group was 278.5398, with a standard deviation of 12.6097. The mean scores for the non-CRAM group was 269.5398, with a standard deviation of 10.1790. Fisher's $t$ was significant beyond the .05 level of confidence. Hypothesis 1 was rejected.

Hypothesis 2.—It was hypothesized that there would be no significant difference between mean test scores of CRAM female students and non-CRAM female students on the School and College Ability Test. This comparison is shown in Table XI.

### Table XI

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>$t$</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>25</td>
<td>277.2400</td>
<td>11.9315</td>
<td>1.5155</td>
<td>NSD*</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>25</td>
<td>272.3198</td>
<td>8.4674</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*No significant difference.

As can be seen from Table XI, a comparison of CRAM female students and non-CRAM female students revealed no significant
difference between mean test scores on the School and College Ability Test. The mean test score for the CRAM female students was 277.2400, with a standard deviation of 11.9315. The mean test score for the non-CRAM female students was 272.3198, with a standard deviation of 8.4674. Fisher's t was not significant at the .05 level of confidence. Therefore, Hypothesis 2 was accepted.

Hypothesis 3.—It was hypothesized that there would be no significant difference between mean test scores of CRAM male students and non-CRAM male students on the School and College Ability Test. The results of this comparison are shown in Table XII.

TABLE XII
A COMPARISON BETWEEN CRAM MALE STUDENTS AND NON-CRAM MALE STUDENTS ON THE SCHOOL AND COLLEGE ABILITY TEST

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>25</td>
<td>279.8398</td>
<td>13.1182</td>
<td>4.0289</td>
<td>SD*</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>25</td>
<td>266.7598</td>
<td>10.9586</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant difference.

A comparison of CRAM male students and non-CRAM male students on the School and College Ability Test in Table XII revealed a significant difference in favor of the CRAM male students beyond the .05 level of confidence. The mean
score for the CRAM male students was 279.8398, with a standard deviation of 13.1182, while the mean score for the non-CRAM male students was 266.7598, with a standard deviation of 10.9586. Fisher's $t$ of 4.0289 was significant beyond the .05 level of confidence. Hypothesis 3 was rejected.

Hypothesis 4.--It was hypothesized that there would be no significant difference between mean test scores of CRAM students and non-CRAM students on the Nelson-Denny Reading Test. These data are shown in Table XIII.

**TABLE XIII**

A COMPARISON OF CRAM STUDENTS AND NON-CRAM STUDENTS ON THE NELSON-DENNY READING TEST

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>$t$</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>50</td>
<td>10.1560</td>
<td>1.9818</td>
<td>4.2061</td>
<td><strong>SD</strong></td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>50</td>
<td>8.6360</td>
<td>1.5721</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant difference.

In Table XIII, a comparison was made between CRAM students and non-CRAM students on the Nelson-Denny Reading Test. The mean score for the CRAM students was 10.1560, with a standard deviation of 1.9818. The mean score for the non-CRAM students was 8.6360, with a standard deviation of 1.5721.
Fisher's $t$ was significant beyond the .05 level of confidence in favor of the CRAM students. Hypothesis 4 was rejected.

**Hypothesis 5.**—It was hypothesized that there would be no significant difference between mean test scores of CRAM female students and non-CRAM female students on the Nelson-Denny Reading Test. A comparison of the female students on this variable is given in Table XIV.

![Table XIV](image)

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>$t$</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>25</td>
<td>9.7640</td>
<td>1.8584</td>
<td>1.8021</td>
<td>NSD*</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>25</td>
<td>8.8480</td>
<td>1.4615</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*No significant difference.

The mean test score for the CRAM female students, as shown in Table XIV, was 9.7640, with a standard deviation of 1.8584. The mean test score for the non-CRAM female students was 8.8480, with a standard deviation of 1.4615. Fisher's $t$ was 1.8021, indicating no statistically significant difference at the .05 level of confidence. Hypothesis 5 was accepted. CRAM female students, however, had a slightly higher mean test score than the non-CRAM female students on the Nelson-Denny Reading Test.
Hypothesis 6.—It was hypothesized that there would be no significant difference between mean test scores of CRAM male students and non-CRAM male students on the Nelson-Denny Reading Test. Information relative to male performance on the test is given in Table XV.

**TABLE XV**

A COMPARISON OF CRAM MALE STUDENTS AND NON-CRAM MALE STUDENTS ON THE NELSON-DENNY READING TEST

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>25</td>
<td>10.5480</td>
<td>2.0235</td>
<td>4.1787</td>
<td>SD*</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>25</td>
<td>8.4240</td>
<td>1.6483</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant difference.

As shown in Table XV, a significant difference was found on the Nelson-Denny Reading Test between CRAM male students and non-CRAM male students. The mean test score for the CRAM male students was 10.5480, with a standard deviation of 2.0235. For the non-CRAM male students, the mean test score was 8.4240, with a standard deviation of 1.6483. Fisher's $t$ was 4.1787 and was significant beyond the .05 level of confidence in favor of the CRAM male students. Hypothesis 6 was rejected.

Hypothesis 7.—It was hypothesized that there would be a significant difference between mean grade-point averages of
CRAM students and non-CRAM students relative to academic performance as determined by teacher-assigned semester marks. The comparison of CRAM students and non-CRAM students on first semester grade-point averages is given in Table XVI.

**TABLE XVI**

A COMPARISON OF CRAM STUDENTS AND NON-CRAM STUDENTS ON FIRST SEMESTER GRADE-POINT AVERAGES

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>50</td>
<td>1.4672</td>
<td>.5604</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>50</td>
<td>1.0960</td>
<td>.6388</td>
<td>3.0577</td>
<td>SD*</td>
</tr>
</tbody>
</table>

*Significant difference.

The results of the first semester grade-point averages between CRAM students and non-CRAM students, as shown in Table XVI, revealed a mean first semester grade-point average of 1.4672 for the CRAM students. The standard deviation was .5604. The mean first semester grade-point average for the non-CRAM students was 1.0960, with a standard deviation of .6388. Fisher's t was 3.0577, showing a significant difference in favor of the CRAM students at better than the .05 level of confidence.

CRAM students and non-CRAM students were compared on second semester grade-point averages. Table XVII gives this information.
TABLE XVII

A COMPARISON OF CRAM STUDENTS AND NON-CRAM STUDENTS ON SECOND SEMESTER GRADE-POINT AVERAGES

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>50</td>
<td>1.3494</td>
<td>.5712</td>
<td>2.7620</td>
<td>SD*</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>50</td>
<td>1.0436</td>
<td>.5238</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant difference.

The data in Table XVII show that a significant difference existed between the second semester grade-point averages of CRAM students and non-CRAM students in favor of the CRAM students. The mean second semester grade-point average of CRAM students was 1.3494, with a standard deviation of .5712. The mean second semester grade-point average of non-CRAM students was 1.0436, with a standard deviation of .5238. Fisher's t was significant beyond the .05 level of confidence. Hypothesis 7, therefore, was accepted.

Hypothesis 8.—It was hypothesized that there would be a significant difference between mean grade-point averages of CRAM female students and non-CRAM female students relative to academic performance as determined by teacher-assigned semester marks. CRAM female students and non-CRAM female students were compared on the basis of first semester and second semester grade-point averages. Table XVIII shows the comparison of female students on the first semester grade-point averages.
TABLE XVIII
A COMPARISON OF CRAM FEMALE STUDENTS AND NON-CRAM FEMALE STUDENTS ON FIRST SEMESTER GRADE-POINT AVERAGES

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>25</td>
<td>1.6412</td>
<td>.4218</td>
<td>1.6258</td>
<td>NSD*</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>25</td>
<td>1.3820</td>
<td>.5987</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*No significant difference.

When CRAM female students were compared with non-CRAM female students on the first semester grade-point averages, there was no statistically significant difference found between the two groups. The mean first semester grade-point average for the CRAM female students was 1.6412, with a standard deviation of .4218. The mean first semester grade-point average for non-CRAM female students was 1.3820, with a standard deviation of .5987. Fisher's t was not significant at the .05 level of confidence. Hypothesis 8 was rejected relative to this aspect of first semester grade-point averages.

CRAM female students and non-CRAM female students were compared on the basis of second semester grade-point averages. A comparison of these two groups is given in Table XIX. When the CRAM female students and non-CRAM female students were compared on second semester grade-point averages, a significant difference was found.
TABLE XIX
A COMPARISON OF CRAM FEMALE STUDENTS AND NON-CRAM FEMALE STUDENTS ON SECOND SEMESTER GRADE-POINT AVERAGES

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>25</td>
<td>1.4936</td>
<td>.5311</td>
<td>2.0579</td>
<td>SD*</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>25</td>
<td>1.1788</td>
<td>.4032</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant difference.

A comparison of CRAM female students and non-CRAM female students on second semester grade-point averages shows a mean for the CRAM female students of 1.4936, with a standard deviation of .5311. The mean second semester grade-point average for non-CRAM female students was 1.1788, with a standard deviation of .4032. Fisher’s t was 2.0579, indicating a significant difference in favor of the CRAM students at the .05 level of confidence. Hypothesis 8 was accepted relative to mean grade-point averages for the second semester.

Hypothesis 9.—It was hypothesized that there would be a significant difference between mean grade-point averages of CRAM male students and non-CRAM male students relative to academic performance as determined by teacher-assigned semester marks. A comparison of grade-point averages for the first semester between the groups is shown in Table XX.
In a comparison of CRAM male students and non-CRAM male students relative to first semester grade-point averages, a statistically significant difference was found in favor of the CRAM male students. The mean first semester grade-point average of CRAM male students was 1.2932, with a standard deviation of .6241. The mean first semester grade-point average of non-CRAM students was .8100, with a standard deviation of .5424. Fisher's $t$ was 3.0308, indicating a significant difference in favor of the CRAM male students beyond the .05 level of confidence.

A comparison of mean grade-point averages of CRAM male students and non-CRAM male students as determined by teacher-assigned semester marks relative to academic performance was also made. When CRAM male students were compared with non-CRAM male students, on second semester grade-point averages, no significant difference was found between the two groups. These data are shown in Table XXI.

### Table XX

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>$t$</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>25</td>
<td>1.2932</td>
<td>.6241</td>
<td>3.0308</td>
<td><em>SD</em></td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>25</td>
<td>.8100</td>
<td>.5424</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant difference.*
TABLE XXI
A COMPARISON OF CRAM MALE STUDENTS AND NON-CRAM MALE STUDENTS ON SECOND SEMESTER GRADE-POINT AVERAGES

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>25</td>
<td>1.2052</td>
<td>.5735</td>
<td>1.9403</td>
<td>NSD*</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>25</td>
<td>.9084</td>
<td>.5913</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*No significant difference

The mean second semester grade-point average of CRAM male students, as shown in Table XXI, was 1.2052, with a standard deviation of .5735. The mean second semester grade-point average for non-CRAM male students was .9084, with a standard deviation of .5913. Fisher's t was 1.9403, and was not significant at the .05 level of confidence. The mean second semester grade-point average of CRAM male students, however, was slightly higher than the mean grade-point average of non-CRAM male students for the second semester. Hypothesis 9 was accepted relative to first semester grade-point averages and rejected relative to second semester grade-point averages.

Hypothesis 10.—It was hypothesized that there would be a significant difference between mean cumulative grade-point averages of CRAM male students and non-CRAM male students on cumulative grade-point averages is given in Table XXII.
TABLE XXII
A COMPARISON OF CRAM MALE STUDENTS AND NON-CRAM MALE STUDENTS ON CUMULATIVE GRADE-POINT AVERAGES

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>25</td>
<td>1.2372</td>
<td>.4755</td>
<td>2.7061</td>
<td>SD</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>25</td>
<td>.8924</td>
<td>.4950</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant difference.

The mean cumulative grade-point average of CRAM male students was 1.2372, with a standard deviation of .4755; for the non-CRAM male students, the mean cumulative grade-point average was .8924, with a standard deviation of .4950. Fisher's t was 2.7061, indicating a significant difference beyond the .05 level of confidence in favor of the CRAM male students. Hypothesis 10 was accepted.

Hypothesis 11.—It was hypothesized that there would be a significant difference between mean cumulative grade-point averages of CRAM female students and non-CRAM female students. These data are shown in Table XXIII.

TABLE XXIII
A COMPARISON OF CRAM FEMALE STUDENTS AND NON-CRAM FEMALE STUDENTS ON CUMULATIVE GRADE-POINT AVERAGES

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>25</td>
<td>1.5360</td>
<td>.4138</td>
<td>2.0154</td>
<td>NSD*</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>25</td>
<td>1.2792</td>
<td>.3702</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*No significant difference.
When CRAM female students were compared with non-CRAM female students relative to cumulative grade-point averages, no significant difference was found. The mean cumulative grade-point average of the CRAM female students was 1.5360; the standard deviation was .4138. The mean cumulative grade-point average of non-CRAM female students was 1.2792; the standard deviation was .3702. Fisher's $t$ was 2.0154 and was not significant at the .05 level of confidence. Hypothesis 11 was rejected.

Hypothesis 12.—It was hypothesized that there would be a significant difference between mean cumulative grade-point averages of CRAM students and non-CRAM students. The results of a comparison between these groups are shown in Table XXIV.

### TABLE XXIV

A COMPARISON OF CRAM STUDENTS AND NON-CRAM STUDENTS ON CUMULATIVE GRADE-POINT AVERAGES

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>$t$</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>50</td>
<td>1.3866</td>
<td>.4701</td>
<td>3.1411</td>
<td>SD*</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>50</td>
<td>1.0858</td>
<td>.4779</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant difference.

A comparison of CRAM students with non-CRAM students relative to cumulative grade-point averages, as shown in Table XXIV, revealed a significant difference in favor of
the CRAM group. The mean cumulative grade-point average of CRAM students was 1.3866; the standard deviation was .4701. The mean cumulative grade-point average of non-CRAM students was 1.0858; the standard deviation was .4779. Fisher's $t$ was significant beyond the .05 level of confidence. Hypothesis 12 was accepted.

**Hypothesis 13.**—It was hypothesized that the college dropout rate for CRAM students would be lower than the dropout rate of non-CRAM students. These data are given in Table XXV.

**TABLE XXV**

CRAM AND NON-CRAM STUDENT WITHDRAWALS FOR THE 1969-70 SCHOOL YEAR*

<table>
<thead>
<tr>
<th>Group</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAM</td>
<td>11</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Non-CRAM</td>
<td>7</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>9</td>
<td>27</td>
</tr>
</tbody>
</table>

*Analysis of withdrawals by semesters given in Tables II and III.

Of the 89 students enrolling for the first semester who had not attended college previously, 3 students dropped out of college, representing 3.37 percent of these students. Of
the 108 CRAM students enrolling for the first semester, 3 students withdrew, representing 2.77 percent of CRAM students enrolled.

During the second semester, 12 CRAM students withdrew, representing 12.57 percent of the total CRAM students enrolled for the second semester. Nine students who had not participated in the CRAM program withdrew from college, representing 12.35 percent of the students enrolled. Hypothesis 13 was rejected.

Chapter Summary

When CRAM students were compared with non-CRAM students on the School and College Ability Test, there was a significant difference in favor of the CRAM group on mean test scores. Mean test scores of CRAM female students and non-CRAM female students were not significantly different on the School and College Ability Test. Mean test scores for CRAM male students were significantly higher than the mean test scores of non-CRAM male students on the School and College Ability Test.

On the Nelson-Denny Reading Test, mean test scores of CRAM students were significant when compared with mean test scores of non-CRAM students. There was no significant difference between mean test scores of CRAM female students and non-CRAM female students on the Nelson-Denny Reading Test.
However, there was a significant difference between mean test scores of CRAM male students and non-CRAM male students on the Nelson-Denny Reading Test.

A significant difference was found between CRAM students and non-CRAM students relative to academic performance as determined by teacher-assigned semester marks. The mean grade-point average for CRAM students was higher than the mean grade-point average of non-CRAM students for the first and second semesters. When compared on the basis of sex, however, female CRAM students' first semester grade-point averages were not significantly higher than the mean grade-point averages of non-CRAM female students for the first semester. There was a statistically significant difference between the mean grade-point averages of CRAM female students and non-CRAM female students on second semester grade-point averages in favor of the CRAM female students. The mean grade-point average for CRAM male students was higher than the mean grade-point average of non-CRAM male students for the first semester. There was no significant difference between the CRAM male students' mean grade-point average and mean grade-point average of non-CRAM male students when second semester grade-point averages were compared.

CRAM students had a mean cumulative grade-point average that was significant when compared with the mean cumulative
grade-point average of non-CRAM students. When compared by groups on the basis of sex, mean cumulative grade-point averages of CRAM female students did not differ significantly from the mean cumulative grade-point average of non-CRAM female students. A statistically significant difference was found between mean cumulative grade-point averages of CRAM male students and non-CRAM male students. This difference favored the CRAM male students.

In terms of numbers, more CRAM students withdrew from college prior to the end of the second semester than did non-CRAM students. When stated in terms of percentages, however, the percentage difference was less than one percent, based on total enrollment for both groups of students. Eighteen male students withdrew (11 CRAM male students and 7 non-CRAM male students) from college. Nine female students (4 CRAM students and 5 non-CRAM students) withdrew from college. Fifteen CRAM students and 12 non-CRAM students withdrew from college, making a total of 27 students who withdrew.
CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to compare the academic performance of students who participated in a summer preparatory and enrichment program with students who did not participate in the program. Subjects used in the study were freshman students enrolled at Jarvis Christian College, a small, private, predominantly black college located in East Texas.

Research tended to indicate that most colleges had a dropout problem, especially among their freshman students. Special orientation, preparation-for-college, and enrichment programs were devised in an effort to eliminate this problem. The special summer college preparatory and enrichment program (CRAM) at Jarvis Christian College was described.

The significance and need for the study rested primarily on the analysis and comparison of the success of these students in college. This was important from an administrative and instructional point of view. In addition, the study was enhanced because findings involving both groups might lead to improvement in methods of teaching, selection of students, and areas in which the students'
strengths and weaknesses could be recognized. The findings might also serve predictive, screening, counseling, and diagnostic purposes.

Studies related to this research dealt primarily with innovative orientation programs which differed from traditional ones. A review of the literature indicated that, for the most part, these programs have been relatively successful. Most of these studies were conducted after the conclusion of the program. Literature suggested that longitudinal and follow-up studies be made in order to make a more valid assessment and evaluation of orientation programs. This study, therefore, was not only necessary, but also direly needed and justified.

Data relative to Nelson-Denny Reading Test scores, School and College Ability Test scores, and students participating in the CRAM program were obtained from the Dean of Student Affairs' Office. Additional statistical data were obtained from the Registrar's Office. This information consisted of (1) date students graduated from high school; (2) prior colleges attended; (3) high school grade averages; (4) students' home state; (5) number and names of freshman students enrolled for the first semester; (6) number and names of students enrolled for the second semester; (7) student withdrawals for the first and second semesters; and (8) grade-point averages. Students who transferred from
another college, students who had attended Jarvis previously, and students who graduated from high school prior to May, 1969, were excluded from the study to eliminate the possibility that prior college training might influence the results of the study.

The subjects used in this study were fifty male students and fifty female students who completed two consecutive semesters of college work at Jarvis Christian College. The 100 students were subdivided into experimental and control groups, with twenty-five male students and twenty-five female students in each group. Students who had participated in the summer preparatory and enrichment program (CRAM) comprised the experimental group. These students were designated as CRAM participants. Students who were invited to participate in the CRAM program and did not participate comprised the control group. These students were designated as non-CRAM participants.

The students were compared on the following variables:

1. Sex
2. School and College Ability Test, Total Scores
3. Nelson-Denny Reading Test, Total Scores
4. First Semester Grade-Point Averages
5. Second Semester Grade-Point Averages
6. Cumulative Grade-Point Averages
Data were available for all 100 students in the study and were computed at the North Texas State University Computer Center, Denton, Texas. The statistical technique used was Fisher's $t$ to test significant differences between means. The research hypotheses were rejected at the .05 level of confidence.

Findings

The following are the more significant findings summarized in terms of the hypotheses posed in the study:

1. There was a significant difference between mean test scores of CRAM students and mean test scores of non-CRAM students on the School and College Ability Test which favored the CRAM students.

2. A comparison of CRAM female students and non-CRAM female students showed no statistically significant difference between mean test scores on the School and College Ability Test.

3. There was a significant difference between mean test scores of CRAM male students and non-CRAM male students on the School and College Ability Test. This difference favored the CRAM male students.

4. When compared with non-CRAM students, CRAM students' mean test scores were significantly higher than the mean test scores of non-CRAM students on the Nelson-Denny Reading Test.
5. There was no significant difference between mean test scores of CRAM female students and mean test scores of non-CRAM female students on the Nelson-Denny Reading Test.

6. A significant difference was found on the Nelson-Denny Reading Test between mean test scores of CRAM male students and non-CRAM male students in favor of the CRAM male students.

7. There was a significant difference between mean grade-point averages of CRAM students and mean grade-point averages of non-CRAM students for the first and second semesters. The mean grade-point average was higher for the CRAM students.

8. No significant difference was found between the mean grade-point averages of CRAM female students and mean grade-point averages of non-CRAM female students for the first semester. A significant difference was found between mean grade-point averages of CRAM female students and mean grade-point averages of non-CRAM female students in favor of the CRAM female students for the second semester.

9. A significant difference was found between mean grade-point averages of CRAM male students and mean grade-point averages of non-CRAM male students for the first semester in favor of the CRAM male students.

10. A comparison of CRAM students with non-CRAM students relative to cumulative grade-point averages showed a significant difference in favor of the CRAM group.
11. There was no significant difference between the mean cumulative grade-point averages of CRAM female students and non-CRAM female students.

12. The mean cumulative grade-point averages of CRAM male students was significantly higher than the mean cumulative grade-point average of non-CRAM male students.

13. A greater number of CRAM students dropped out of college than non-CRAM students. When based on percentages of students enrolled for each group, however, this difference was not significant.

Conclusions

As a result of the findings of this study, the following conclusions were made:

1. CRAM students as a group will score higher than non-CRAM students on the Nelson-Denny Reading Test, School and College Ability Test, first semester grade-point average, second semester grade-point average, and cumulative grade-point average.

2. CRAM female students and non-CRAM female students will not show a significant difference between means on the School and College Ability Test, Nelson-Denny Reading Test, first semester grade-point average, and cumulative grade-point average. They will show a significant difference between means relative to second semester grade-point average.
3. The mean test scores of CRAM male students will be significantly higher than mean test scores of non-CRAM male students on the School and College Ability Test and on the Nelson-Denny Reading Test.

4. The mean grade-point average for CRAM male students will be significantly higher than the mean grade-point average of non-CRAM male students for the first semester. The mean cumulative grade-point average for CRAM male students will be significantly higher than mean grade-point averages of non-CRAM male students.

5. There will be no significant difference between the mean grade point averages of CRAM male students and the mean grade-point averages of non-CRAM male students on second semester grade-point averages.

Recommendations

This study revealed a number of problems which have implications for further investigation. Based on the findings of the study, the following recommendations are offered for consideration:

1. There is a definite need for more studies of this nature in institutions of higher education and especially in predominantly black colleges. A review of the literature indicated that there was very little published research concerning special and innovative programs for prospective college freshmen in predominantly black
colleges. It is probable that more studies of this kind could give added validity to this study.

2. Studies have been made relative to the ethnic background and the socio-economic status of the families of students as to whether or not these factors contributed to lack of academic success of students in college. An investigation of the socio-economic status and the ethnic background of the freshman students at Jarvis Christian College would be of benefit to the Institution and to other colleges as well.

3. The investigation of the educational background and occupational levels of achievement of the students' parents might prove to be an important area for further study.

4. No significant difference existed between the CRAM students and non-CRAM students relative to high school grade averages. However, the underlying factors relative to why the CRAM students, as a group, tended to have higher mean scores on the Nelson-Denny Reading Test and the School and College Ability Test would lend itself to further investigation.

5. The CRAM Program provided some intangible benefits not measured by academic performance. It is recommended that this type of general and academic orientation be continued at Jarvis Christian College.

6. Research of the same or similar design as this one should be conducted by institutions which have similar
programs. A study of this type would be of value in assessing the program at Jarvis Christian College and at similar institutions.

7. A follow-up study of these students should be conducted throughout their college careers. Such research would be of value in determining the relationship of the program to continued academic performance.

8. Future decisions regarding the purposes and procedures of the program at Jarvis Christian College could draw basic information from this research regarding student academic performance in relation to the type of program for orienting prospective college freshman students.

9. Institutions conducting general and academic freshman orientation programs similar to the one at Jarvis Christian College should give consideration to the recommendations stated above.
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