AN ANALYSIS OF THE COLLEGE PREPARATION DEVELOPMENTAL PROGRAM FOR LOW-ACHIEVING HIGH SCHOOL GRADUATES AT GRAND RAPIDS JUNIOR COLLEGE

> Thesis for the Degree of Ph. D. MICHIGAN STATE UNIVERSITY Merry Anne Gregory 1966

#### This is to certify that the

thesis entitled

AN ANALYSIS OF THE COLLEGE PREPARATION DEVELOPMENTAL PROGRAM FOR LOW-ACHIEVING HIGH SCHOOL GRADUATES AT GRAND RAPIDS JUNIOR COLLEGE

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has been accepted towards fulfillment of the requirements for

Ph.D. degree in Guidance & Counseling

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1666 Date March 14

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# AN ANALYSIS OF THE COLLEGE PREPARATION DEVELOPMENTAL PROGRAM FOR LOW-ACHIEVING HIGH SCHOOL GRADUATES AT GRAND RAPIDS JUNIOR COLLEGE

By

Merry Anne Gregory

# A THESIS

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

# DOCTOR OF PHILOSOPHY

College of Education Department of Counseling, Personnel Services and Educational Psychology

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## ACKNOWLEDGEMENTS

Throughout the pursuance of a doctoral program, the student is cognizant of contributions made by family, friends, and the members of the doctoral committee toward the successful completion of the Ph.D. degree.

I wish to express my deep gratitude to my late father and mother, Peter K. and Gertrude E. Pierce. Their continued encouragement and faith in my ability has always been an impetus for the successful completion of any selected goal. Their courage and endurance and love have been and will continue to be examples from which the guidelines of my own life are drawn.

My only sister, Mildred P. Meyer, has generously given me a great deal of help and advice throughout my doctoral program and in the preparation of this work. Her most able and enthusiastic assistance and her constant support and love have greatly contributed to my success in the program. My grateful thanks go to my sister.

To my late brother-in-law, Dr. Clarence E. Meyer, I wish to acknowledge and thank for his support and encouragement. His image in the academic world has indeed been an inspiration.

Dr. James W. Costar has been the chairman of my committee and Dr. Willa Norris, Dr. Harold Dillon, and Dr.

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Arthur Vener have served as members of the committee. Dr. Dillon was unable to continue as a committee member and Dr. Max Raines graciously consented to replace him. My thanks to all of them for their ready assistance and helpful advice. In particular, I wish to express my appreciation to Dr. Costar who so generously has given his time and guidance to me throughout the entire course of the program. It has been a real pleasure and privilege to work with him.

I wish to acknowledge the encouragement, interest, and help given me during my doctoral program by my friends, Margaret Postmus and Dr. Jane Bonnell. I wish also to acknowledge the support given me by my staff colleagues in the Grand Rapids Junior College Counseling Center.

My thanks go to Marcia Cross and Patricia Gignac for their interest and the typing which they have done in the preparation of this work. Also my thanks go to David Cox for his help with the statistics in this dissertation.

I wish to express my gratitude to Jack E. Barrows for his understanding and encouraging support during the writing of this study.

It has been a singular pleasure and a most worthwhile experience to have worked with many fine individuals from the Michigan State University staff; my thanks to all of them. However, I wish to particularly acknowledge the help and guidance of Dr. Bill Kell.

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#### ABSTRACT

## AN ANALYSIS OF THE COLLEGE PREPARATION DEVELOPMENTAL PROGRAM FOR LOW-ACHIEVING HIGH SCHOOL GRADUATES AT GRAND RAPIDS JUNIOR COLLEGE

by Merry Anne Gregory

Throughout the nation educators in general, and particularly educators concerned with community junior colleges, are deeply concerned about the growing number of low-achieving high school graduates who are seeking admission to institutions of higher learning. Junior colleges with "open-door" admission policies face the growing problem of designing and implimenting curriculums which will meet the needs of students whose high school records give evidence of low achievement.

Many junior colleges with "open-door" admission policies are attempting to reduce the amount of wasted human talent by offering special courses and programs to low-achieving high school graduates in an effort to provide them with an opportunity to gain the academic background necessary for college-level work. As an example, the one-semester Developmental Program at Grand Rapids Junior College was designed to help high school low-achievers acquire those skills and attitudes necessary for satisfactory academic achievement in junior college. In this study an attempt was made to evaluate the

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effectiveness of the Developmental Program at Grand Rapids Junior College when used in conjunction with an "open-door" admissions policy.

Three groups of students were selected for the study. All students in the three groups were low-achieving high school graduates with a high school academic grade point average of 1.5 or lower on a 4 point scale. One group, the Control Group, was comprised of all the students who entered Grand Rapids Junior College at the beginning of the fall semester of 1957. The other two groups, Developmental Groups I and II, were comprised of all students who entered Grand Rapids Junior College at the beginning of the fall semester of 1960 and the spring semester of 1961, respectively.

Homogeniety in respect to scholastic aptitude and mathematical, English, and reading skills was established for Developmental Groups I and II. Five standardized tests measuring these characteristics were administered to all students in both groups. T-tests were calculated on the resulting scores. The results of the T-tests on the five variables did establish that no significant difference existed between the two groups at the .05 level of confidence.

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Students in the Control Group were admitted without restriction relative to course and curriculum selection. Continued attendance at Grand Rapids Junior College depended upon the student's ability to maintain a 2.0 grade point average. Those students who had not earned the necessary grade point average by the end of each semester were placed on academic probation pending dismissal. Developmental Groups I and II were admitted on a one-semester trial basis to a Developmental Program in which course selection was limited to remedial subjects. The number of credit hours was also limited. The criterion for successful academic performance was the achievement of a 2.0 grade point average at the end of the Developmental semester. The students in both groups designated as "successful" were allowed to continue in the curriculum of their choice. Their continued attendance at Grand Rapids Junior College depended upon the all-college regulations of academic selective retention. One difference existed between Developmental Group I and Developmental Group II: admission was delayed one semester for Developmental Group II in order to determine if this single factor would have an effect on the academic performance of students in the group.

In order to determine the value of the Developmental Program at Grand Rapids Junior College, a major hypothesis

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and two sub-hypotheses were tested. They are:

- 1. The cumulative grade point averages achieved by students in Developmental Group I and Developmental Group II during their enrollment in Grand Rapids Junior College will significantly exceed the cumulative grade point averages achieved by students in the Control Group during their enrollment in Grand Rapids Junior College.
  - (a) The proportion of students in Developmental Group II who successfully complete the Developmental Program will exceed the proportion of students in Developmental Group I who successfully complete the Developmental Program.
  - (b) The proportion of students in Developmental Group II who achieve a satisfactory grade point average while enrolled at Grand Rapids Junior College for each semester included in the study will exceed the proportion of students in Developmental Group I who achieved a satisfactory grade point average while enrolled at Grand Rapids Junior College for each semester included in the study.

Major differences were found in all three cases.

Structured interviews were also held with each individual student in Developmental Groups I and II at the end of the Developmental semester. Responses made by students in both groups to selected questions thought to be related to academic success in Grand Rapids Junior College were recorded. Analysis of this data was made by comparing the responses of students in Developmental Group I with the responses of students in Developmental Group II in an attempt to determine which non-intellectual

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factors were felt by students to have a significant effect on their academic performance. A comparison was also made between the responses of the "successful" and "unsuccessful" students in each group. Comparisons indicated that the students themselves thought that factors other than mental ability did have an effect on their academic success. Responses indicated differences did exist between the feelings of students in Developmental Group I and Developmental Group II. Responses also indicated that similarities existed among "successful" students in both Developmental Groups and among "unsuccessful" students in both Developmental groups.

The major conclusions drawn as a result of this study were:

- 1. The Developmental Program at Grand Rapids Junior College is successfully meeting the specific objective for which it was established.
- 2. The Developmental Program at Grand Rapids Junior College encourages a higher percentage of lowachieving students to drop out of school early in their program.
- 3. A one-semester delay before admission to the Developmental Program at Grand Rapids Junior College increases the proportion of students who successfully complete the Developmental Program and each succeeding semester in the regular program.
- 4. Low-achieving junior college students feel that economic, social, and emotional factors all have a significant effect on their academic success.

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- 5. Individual counseling interviews during the first few weeks of the Developmental semester should be included as an integral part of the program.
- 6. Most students in the Developmental Program will hold positive feelings about the program at the end of the Developmental semester.

#### CHAPTER I

#### INTRODUCTION

Throughout the nation the community junior college movement is gaining momentum. In recent years such colleges have increased both in number and in size. This is due in a large part to the increased emphasis in the United States upon the need for learning beyond that ordinarily received in high school. Perspective college students today have a wider range in age, socio-economic background, work experience, degree of motivation, and academic ability than they did a generation ago. The community junior college with its "open-door" policy of unrestricted admission of high school graduates attempts to offer an opportunity to all those who seek additional education either in terminal technical curriculums or college parallel curriculums. Under such conditions there arises a complexity of problems unique to the student population which comprises a community junior college.

One of the most disturbing problems which confronts the staffs of junior colleges, particularly the counseling and guidance staff, is that of the large proportion of students who have low achievement levels as measured by standardized tests and high school academic grade point

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average.<sup>1</sup> How can such a student be helped to make a realistic selection of a college curriculum or other type of training? What kind of classes and instructional techniques can be provided for him so that he will be better able to acquire the basic skills which he lacks in English, reading, and mathematics? What opportunities can be offered to him for better vocational, educational, and personal-social guidance?

# Purpose of the Study

The purpose of this study is to analyze the success of the Developmental Program at Grand Rapids Junior College relative to helping low-achieving high school graduates perform successfully at the college level. Correlated with the purpose of the study is the one major objective of the Developmental Program: helping low-achieving high school graduates to obtain a satisfactory college grade point average. To achieve this purpose a follow-up study of three groups of Grand Rapids Junior College students whose high school academic grade point average was 1.5 or lower on a 4 point scale was conducted. Two of these three

<sup>&</sup>lt;sup>1</sup>Arla Lando DeHart, Jr. "Possible Selective Admission's Criteria for the California Public Junior Colleges," Ph.D. Dissertation, Stanford University, 1962, p. 6.

groups of students had been enrolled in a specifically designed experimental Developmental Program in Grand Rapids Junior College: Developmental Group I entered the program at the beginning of the fall semester of 1960 and Developmental Group II entered the program at the beginning of the spring semester of 1962. The Developmental Program was the same for both Developmental Group I and Developmental Group II, including courses taught and teaching and counseling staff. The third group was comprised of students who entered Grand Rapids Junior College at the beginning of the fall semester of 1957 and would have been placed in the Developmental Program had there been such a program available at the time of their admission; none of the students in this Control Group are presently in attendance at Grand Rapids Junior College.

Not only is there a need to determine the success of such a remedial curriculum in aiding low-achieving high school graduates to perform successfully at the college level, but there is also a need to learn more about the economic, social, and emotional factors which Junior College students feel have an effect on their academic success. The results of this study can be useful in determining whether an "open-door" policy in the community junior college for all high school graduates seeking admission is a practical means of providing further

education for high school graduates who were low-achievers at the high school level because of lack of basic skills rather than lack of intellectual ability.

#### Statement of the Problem

An attempt will be made in this study to analyze the effectiveness of the Developmental Program at Grand Rapids Junior College, used in conjunction with an "opendoor" policy, relative to its purpose which is preparing low-achieving high school graduates to perform successfully in curriculums at Grand Rapids Junior College. The analysis will be based on a follow-up study of three groups of students: (1) a Control Group whose participants were admitted to the college at the beginning of the fall semester of 1957 and had an unrestricted selection of curriculum and courses; (2) a Developmental Group I whose members were enrolled at the beginning of the fall semester of 1960; and (3) a Developmental Group II whose members were enrolled at the beginning of the spring semester of 1962. Admission was delayed one semester for the latter group in order to assess the positive or negative effect this delay factor might have (1) upon the number of students in Developmental Group II who successfully completed the Developmental Program in comparison with the number of students in Developmental Group I who

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successfully completed the Developmental Program and (2) upon the number of those "successful" students in Developmental Group II who continued to maintain satisfactory academic performance at the college level after leaving the Developmental Program in comparison with the number of those "successful" students in Developmental Group I who continued to maintain satisfactory academic performance at the college level. Academic success or failure of each student in these three groups will be determined on the basis of his accumulated grade point average over a period of time designated as "minimum" for the completion of a two-year program at Grand Rapids Junior College. Through structured interviews at the termination of the one-semester Developmental Program, an attempt will also be made to determine the economic, social, and emotional factors which students in both Developmental Groups feel have an effect on their academic success.

#### Need for the Study

The rationale upon which this study is based is the same as that postulated by several other researchers from both community junior colleges and senior institutions of higher education. Many researchers have used high school academic grade point average and/or scores achieved

on standardized tests to predict the academic success of individuals seeking admission to college. Thus many senior institutions have established cut-off points relative to the above criteria to determine whether a potential student should be admitted or rejected.

The community junior college "open-door" admission policy can only use the above criteria for academic placement purposes. However, junior colleges with crowded facilities and ever growing numbers of students are finding it necessary to study the kind of curriculum which might best give low-achieving high school graduates an opportunity to acquire those skills essential for successful completion of their academic programs in a minimum amount of time.

Thornton indicates the direction of effort of junior colleges in this area. "The community junior colleges realize that traditional college programs are neither effective nor appropriate for a great many potential students."<sup>2</sup> However, he cautions, "It (the open door) does not, of course, guarantee that every student will succeed. Its purpose is to make sure that every person

<sup>&</sup>lt;sup>2</sup>James W. Thornton, "The Expanding Role of the Junior College," <u>Junior College</u> <u>Journal</u>, Vol. 33, (January, 1933), p. 4.

is granted the opportunity to succeed or fail by his own efforts. Such a policy recognizes also that the most precious resource of the nation consists of the many and varied abilities of its citizens."3

Edinger and Bell support the above contention by stating, ". . . these two-year institutions have accepted the responsibility for seeing to it that no individual wants for training or education to prepare him for productive citizenship. By providing meaningful opportunities for the "ineligibles", for those with economic difficulties, for the technical vocational student, and for adults seeking educational upgrading or enrichment, we are making a major contribution to society."<sup>4</sup>

DeHart inquires, "Do the demands of quantity <u>and</u> quality in education require that the proof of ability of a student be established before he enters college, or should this proof of ability be in the trial of it in college, and that each student must have a chance at this trial?"<sup>5</sup>

<sup>3&</sup>lt;sub>Ibid</sub>.

<sup>&</sup>lt;sup>4</sup>Oscar H. Edinger, Jr. and Max D. Bell, "Observations on Opportunity," <u>Junior College Journal</u>, Vol. 33 (January, 1963), p. 4.

<sup>&</sup>lt;sup>5</sup>DeHart, <u>op</u>. <u>cit</u>., p. 2.

In addition, Morse states when referring to the community college, "Surely one of the cornerstones of its philosophy and one of the basic tenets of its development is just this - access to educational opportunities beyond the high school for many young people in the United States who might otherwise never have such an opportunity opened to them."<sup>6</sup>

In reporting a study for the Curriculum Commission of the American Association of Junior Colleges, Cosand points out that some junior colleges suggest the use of remedial courses to bring less able students up to minimum standards required for transfer work or admission to terminal programs.<sup>7</sup> Current support for such programs is based largely on experience and judgment. There is need for systematic studies dealing with their effectiveness.

# Hypotheses

The ultimate purpose of this study is two-fold: (1) to determine the success of the single, structured Developmental Program at Grand Rapids Junior College in preparing low-achieving high school students to perform

<sup>&</sup>lt;sup>6</sup>H.T. Morse, "Between the Ivory Tower and the Market Place," <u>Junior College Journal</u>, Vol. 35 (April, 1965), p.16.

<sup>7</sup>Joseph P. Cosand, "Recognition of and Programs for the Low Ability Student," Santa Barbara City College, February 20, 1960, p. 6. (dittoed report).

successfully at the college level and (2) to determine the economic, social, and emotional factors which Developmental students feel have an effect on their academic success.

Relative to the first purpose of the study, the major hypothesis is:

1. Low-achieving high school graduates who participate in the Developmental Program will earn higher grade point averages during their enrollment at Grand Rapids Junior College than will low-achieving high school graduates who do not participate in the Developmental Program.

In order to gain additional information relative to the primary purpose of the study, the sub-hypotheses are:

- a. The proportion of students in Developmental Group II who successfully complete the Developmental Program will be greater than the number of students in Developmental Group I who successfully complete the Developmental Program.
- b. The proportion of students in Developmental Group II who earn satisfactory grade point averages during each term they are enrolled in Grand Rapids Junior College will be greater than the proportion who earn satisfactory grade point averages in Developmental Group I.

As a corollary relative to the second purpose of the study which is based on the responses to structured interviews required of each student in both Developmental groups, it is thought that:

> There are significant economic, social, and emotional factors which Developmental students feel have an effect on their academic success in the Developmental Program.

Other researchers have thought that in many cases low academic achievement may not be a result of low mental ability, but may be caused by economic, social, and emotional factors which contribute to the academic disfunction of the individual. As a part of this study an attempt will be made to determine if Developmental students at Grand Rapids Junior College feel that such factors do have an effect on their academic success in the Developmental Program.

### Design of the Study

The Control Group was selected from those students who were admitted at the beginning of the fall semester of 1957. At this time Grand Rapids Junior College did not offer a Developmental Program so each entrant was given complete freedom to select a curriculum, courses, and the number of credit hours he wished to carry during the semester. Progress in each case was determined by the student's ability to maintain a 2.0 grade point average. Those who did not earn the necessary grade point average at the end of each semester were placed on academic probation pending a dismissal action.

Developmental Group I was selected from those students who were admitted at the beginning of the fall semester of 1960, and Developmental Group II was selected

from those students who were admitted at the beginning of the spring semester of 1962. Admission into the Developmental Program was delayed one semester for Developmental Group II in order to assess the positive or negative effect which this delay factor might have upon the academic performance of students in Developmental Group II in comparison with the academic performance of students in Developmental Group I.

Placement of entering freshmen in the Developmental Program was determined solely by high school academic grade point average. Responsibility for conducting the program was assigned to the counseling staff: the counselors taught all of the Developmental classes and performed all of the guidance services for Developmental students. The students were placed on a one-semester probation in a prescribed remedial program which included Developmental English Ol, Developmental Reading Ol, Developmental Algebra, physical education, and Psychology A (a group guidance orientation course). Thus those students who had the intellectual ability and the willingness to put forth maximum effort had an opportunity to demonstrate by obtaining satisfactory grades that they should be admitted into the college level program. A 2.0 academic average at the completion of the Developmental Program was used as the criterion for determining those students who were

allowed to continue at Grand Rapids Junior College. Their further progress was governed by the following all-college rules of academic selective retention:

- 1. Probation
  - a. Students with 18 accumulated hours or less must maintain an accumulated grade point average of 1.5 or higher or be placed on probation.
  - b. Students with more than 18 but less than 37 accumulated hours must maintain an accumulative grade point average of 1.75 or higher or be placed on probation.
  - c. Students with 37 or more accumulated hours must maintain an accumulated grade point average of 2.0 or higher or be placed on probation.

Probationary students must raise their accumulative grade point average to the minimum required for the succeeding semester in which they are enrolled or be disqualified. Students will not be placed on probation more than twice, but will be immediately disqualified.

- 2. Disqualification
  - a. Students with 18 accumulated hours or less must maintain an accumulative grade point average of 1.0 or higher or be disqualified.
  - b. Students with more than 18 but less than 37 accumulative hours must maintain an accumulative grade point average of 1.3 or higher or be disqualified.
  - c. Students with 37 or more accumulative hours must maintain an accumulative grade point average of 1.6 or higher or be disqualified.

Students disqualified from Grand Rapids Junior College (or any other college or university) will not be considered for readmission (or admission) to Grand Rapids Junior College until at least one semester elapses from the date of disqualification.

As a part of the study each student in Developmental Group I and Developmental Group II was administered a battery of standardized tests which included the following: The Raven's Progressive Matrices, Form 1938, The Otis Quick-Scoring Mental Ability Test, Gamma Form, The Cooperative English Mechanics Test, The Cooperative C-2 Reading Test, and The School and College Ability Test, Form 2. Scores on these five tests were used to establish the homogeniety of the two groups relative to the factors which the tests measured. The purpose of establishing the homogeniety of the two groups which had been previously selected on the basis of high school academic grade point average was to make the comparison of the academic achievement of these two groups more valid. In establishing this homogeniety, the .05 level of significance was selected.

The cumulative grade point average at the termination of the last semester in attendance for each student in all three groups was analyzed to determine if the Developmental Program had a positive effect on the academic success of these students. The .05 level of significance was selected for this purpose.

A follow-up study of the individuals in all three groups was conducted. For the Control Group the study began

with the entering semester at Grand Rapids Junior College and terminated after a maximum period of four consecutive semesters at Grand Rapids Junior College. For Developmental Groups I and II the study began with the entering Developmental semester at Grand Rapids Junior College and terminated after a maximum period of five consecutive semesters at Grand Rapids Junior College (the Developmental semester plus the following four consecutive semesters). The number of semesters was arbitrarily determined on the basis that this would be the minimum period of time necessary to complete any curriculum at Grand Rapids Junior College. Interviews were held at the end of the Developmental semester with all students in both Developmental groups based on structured questions designed to bring forth data relative to economic, social, and emotional factors which the students felt might contribute to their success or failure in completing the Developmental Program. The data from these interviews were quantified to determine which factors students felt were most affecting their academic success.

#### Summary

In this chapter the problems which generated the study are discussed and the purpose is stated as an attempt to describe and evaluate the Developmental Program

at Grand Rapids Junior College designed to assist lowachieving high school graduates achieve academic success at the college level. The importance of the study has been discussed, the major hypothesis, sub-hypotheses, and corollary have been stated in broad research form, and the design of the study has been described. The completion of this thesis will be presented in four additional chapters.

In the next chapter, Chapter II, a review of the literature relating to those low-achieving high school graduates who enter college, the focus is on the most relevant aspects of the studies.

In Chapter III, the method of data collection and interview is presented. The population and the method of sample selection is described. Standardized testing devices and other methods of measurement used in the study are discussed. Hypotheses and analysis procedures are included.

In Chapter IV, the analysis of the data is presented, the hypotheses are examined in relation to the data, and the findings discussed.

Chapter V includes a summary of the total study and the conclusions that have been drawn. Implications for future research related to this study are also discussed.

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#### CHAPTER II

#### REVIEW OF THE LITERATURE

Technological and scientific advancement coupled with the international struggle for world power in which democracy must live or die has brought into focus the need to utilize the maximum potential of each individual by providing him with the education, whether it be of a technical or academic nature, necessary to realize his capabilities. Thus in the United States there is a large and growing demand for education and training beyond the high school level for the young men and women of this nation.

Educators are currently faced with the problem that among those young people seeking post-high school educational and training opportunities there are many who can not meet admission standards of most colleges and universities because of poor high school academic achievement or low scores on standardized achievement tests. These rejectees have been labled as "low-achievers." Social and psychological factors play major roles in the inability to achieve on the part of many of the rejectees. The junior colleges with "open-door" admission policies are the recipients of many of these low-achieving high school graduates. Such colleges are faced with the problems of admission and retention policies for these
young people. Course and curriculum selection and adequate guidance and counseling services also constitute problem areas with this type of student.

While surveying the literature relative to the above problems, three following areas were pursued: (1) the current interest in the necessity of providing education commensurate with the potential of each individual, (2) factors relative to the dynamics of underachievement, and (3) programs which have been developed in colleges in an attempt to cope with this educational problem. A concern with these areas is the focus of this research.

Because this study deals specifically with Grand Rapids Junior College, more attention has been given to the literature which is pertinent to junior rather than senior colleges.

Current Interest of Educators in Low-Achievement

Among junior college educators as well as others in the field of education there is general agreement that in a democratic society each individual has the right to expect an equal opportunity to develop to the maximum level of his potential as a human being. Schenz stated that during the next decade increasing numbers of young men and women with widely varying abilities will be applying for admission to junior colleges throughout the United States. Many of these applicants with low high school achievement will not be able to meet the usual requirements of the junior college transfer or terminal programs. Many junior colleges are, therefore, being confronted with the problem of how to meet the needs of this type of student.<sup>1</sup>

The Curriculum Commission of the American Association of Junior Colleges felt that the problem of the low-achieving student to be of such importance that a specific study was done in this area. Some of the findings of this study as reported by Schenz were as follows:

- 1. Junior colleges follow varying practices in identifying and in admitting students with low ability and offer recommendations supporting varying practices in the admission of such students to their colleges.
- 2. A vast majority (91 per cent) of the colleges responding indicated that the door was "wide open" for all high school graduates . . .
- 3. . . only twenty per cent of the colleges have designed special courses and curriculums for them.<sup>2</sup>

On the basis of the above study the following conclusions were drawn:

<sup>1</sup>Robert F. Schenz, "What is Done For Low Ability Students," <u>Junior College</u> <u>Journal</u>, Vol. 34 (May, 1964), p. 22. <sup>2</sup>Ibid., pp. 22-23.

- 1. The remedial function is accepted by the administrators of junior colleges as a legitimate function of these institutions.
- 2. Administrators of junior colleges accept the responsibility of providing courses and curriculums to meet the needs of students with low ability.<sup>3</sup>

Kastner has written, "A community college with an open-door policy is faced with a complicated dilemma. Students who are insufficiently prepared for continuing their education on the college level are allowed to enter. When such students are placed in classes geared for coordination with four-year institutions, there is little hope for their academic survival. However, if the curriculum is organized around a program which meets the needs of the poorly prepared student, the capable student will not receive adequate training. The ideal curriculum should contain a dual program to satisfy the needs of both groups."<sup>4</sup>

Kastner suggest the following possible solutions:

1. Remedial courses are already being offered in such freshman subjects as English and mathematics. This approach should be expanded and elaborated to include the areas of social and physical science courses. Students would attend regular college level courses plus remedial sessions.

<sup>&</sup>lt;sup>3</sup><u>Ibid</u>., p. 24.

<sup>&</sup>lt;sup>4</sup>Harold H. Kastner, Jr., "Student Deficiencies and the Community College Dilemma," <u>Junior College Journal</u>, Vol. 30, No. 3 (November, 1959), p. 140.

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2. All students, regardless of preparation, would be placed in regular classes, and after the first three or four weeks of each semester those students desiring to do so could be given an opportunity to change their status to that of special student. The special student would be required to continue to attend regular classes as well as special remedial sessions.<sup>5</sup>

O'Connell wrote, "In most states community colleges are required to admit high school graduates without regard to the quality or depth of their secondary school preparation. Not infrequently many applicants are illequipped to cope with the rigors of a traditional academic schedule . . . "<sup>6</sup> He feels that, "New policies must be devised. The answer lies not in abolishing the open-door, but rather in modifying it. . . In instances where the tests and records indicate adequate potential but poor preparation and low achievement, the applicant should be required to attend a college-sponsored summer remedial program as a condition of admission."<sup>7</sup>

Chambers pointed out that the community colleges will bear the heaviest burden in nurturing the educational

<sup>6</sup>Alfred C. O'Connell, "The Open Door --- A License to Fail?" Junior College Journal, Vol. XXXI, No. 5 (January, 1961), p. 241.

<sup>&</sup>lt;sup>5</sup>Ibid., pp. 140-142.

<sup>7&</sup>lt;sub>Ibid</sub>.

capabilities of young men and women.<sup>8</sup> He continued by stating that experimental preparatory programs should be designed which would emphasize effective study habits or attempt to correct poor academic preparation. Some such programs are on trial in several colleges.<sup>9</sup> Chambers concluded with:

> The community college, because it includes terminal and university parallel curriculums, is unique among colleges in its capacity to adapt the core curriculum as a means of "sorting" and helping every student to "become all that he is capable of being."10

Morton stated that "an appreciable number of those who manage to get admitted to the junior college will be struggling to rise above a relatively poor high school record. In many cases, poor motivation and attendant weakness produce a record much below the student's real potentialities. . . While there are dangers in ignoring the records of high school days, these records in themselves do not constitute indisputable and adequate proof of incapacity for college work."<sup>11</sup>

<sup>&</sup>lt;sup>8</sup>Frank M. Chambers, "A College Admission Policy to Reduce Attrition," <u>Junior</u> <u>College</u> <u>Journal</u>, Vol. XXI, No. 5 (January, 1961), p. 251.

<sup>&</sup>lt;sup>9</sup>Ibid., p. 253.

<sup>10&</sup>lt;sub>Ibid</sub>., p. 254.

<sup>&</sup>lt;sup>11</sup>Richard K. Morton, "The Junior College and the New Student," <u>Junior College</u> <u>Journal</u>, Vol. 31, No. 8 (April, 1961), p. 434.

Cosand indicated, "Some junior colleges suggest the use of remedial courses to bring less able students up to the minimum standards required for transfer work or for admission to terminal programs. Other institutions have established required courses for low ability students prior to enrolling them in transfer or terminal programs. . . . Regardless of the approach taken, the ultimate goal is a program of studies suited to individual students."<sup>12</sup>

In writing about the community college, O'Connell pointed out that a community college is often described as a uniquely American or democratic institution which recognizes the importance of the "average" person having the opportunity to go beyond high school. The "late bloomer" often finds the community college the best garden."<sup>13</sup>

Thornton pointed out that "the community junior college realizes that traditional college programs are neither effective nor appropriate for a great many potential students."<sup>14</sup>

<sup>12</sup>Joseph P. Cosand, "Recognition of and Programs for the Low Ability Student," (Santa Barbara City College, February 20, 1960), p. 6.

<sup>&</sup>lt;sup>13</sup>Thomas E. O'Connell, "The Community College," <u>From Hanover</u>, Vol. XIV, No. 2 (Spring, 1964), pp. 14-17.

<sup>14</sup>James W. Thornton, <u>The Community College</u>, New York: John Wiley and Sons, 1960, p. 37.

Peterson and Bridgeman stated:

The junior college has a unique obligation in the area of remedial instruction. It has always been a place where students who had failed to make the most of their earlier opportunities could have "another chance". The function of the junior college cannot be abandoned without sacrificing one of the most important purposes of a community college.<sup>15</sup>

Schenz reached the following conclusion from his study:

Junior colleges not only follow varying curriculum practices but also offer recommendations supporting varying practices in the provision of special courses and curricula for students of low ability. Even though 91% of the junior colleges studied admit students with low ability, only 20% have designed special courses and curricula for such students. Two out of three of these colleges require students of low ability to enroll in these specially designed courses.16

Kreppel has written, "The junior college has the potential for removing barriers to post-high school education --- geographic barriers of those who cannot be away from home, financial barriers of those who cannot afford a residential college, and motivation barriers of those who desire further study before choosing careers."17

DeHart pointed out that most people still believe that all high school graduates should have an opportunity

<sup>&</sup>lt;sup>15</sup>G.H. Peterson and Donald G. Bridgeman, "Gearing to an Expanded Enrollment," <u>Junior College</u> <u>Journal</u>, Vol. XXXIX, No. 6 (February, 1959), p. 331.

<sup>&</sup>lt;sup>16</sup>Schenz, op. cit., p. 18.

<sup>&</sup>lt;sup>17</sup>Frances Kreppel, "Standards of Excellence," Junior College Journal, Vol. 34 (September, 1963), p. 8.

for higher education.<sup>18</sup> His study gave evidence of the difficulty in denying admission to potentially failing students without, at the same time, eliminating some potentially successful students. Rejection of even small numbers of potentially successful students is not acceptable in the present situation.<sup>19</sup> DeHart suggests that an "opportunity program be designed for students who do not qualify for admission to the regular college program. A student would be expected to earn his way out of such a program within one semester or be dropped from school.<sup>20</sup> In this way the junior college door would be an open door rather than a revolving one.<sup>21</sup>

Some Factors Relative to Under-Achievement

It is readily apparent that colleges and universities and junior colleges in particular face the ever-growing problem of more and more students with poor high school academic records and/or low scores on standardized achievement and ability tests seeking admission to institutions of higher learning. It has been found that this group of students is comprised of those having low

<sup>19</sup><u>Ibid</u>., p. 114 <sup>20</sup><u>Ibid</u>., p. 115. <sup>21</sup><u>Ibid</u>., p. 119.

<sup>&</sup>lt;sup>18</sup>Arla Lando DeHart, Jr., "Possible Selective Admission's Criteria for the California Public Junior Colleges," Doctoral Dissertation, Stanford University, 1962, p. 110. (Microfilm.)

ability and also those who are under-achieving, that is those who are achieving below their ability level as measured on standardized aptitude tests. In a democracy the basic tenet is to provide opportunities for every individual to realize his potential. However, in so doing, it must be recognized that problems presented by the under-achiever are often quite different from those of the low ability student. The potential of the underachiever should not be wasted. Thus it is necessary to attempt to identify him and understand the dynamics of under-achievement so that effective remedial education and guidance can be offered to him. The recognition of such a problem is evidenced in the findings of authoritative writers in this special field of research.

Nardelli found evidence that the physical, mental, and emotional patterns of junior college students, in general, differ from the students in high schools or senior institutions. Students in a junior college find this period one of catharsis. It is a time for re-evaluation of their perspective and preparation for living and working.<sup>22</sup> He stated, "Many of the learning patterns of junior college students are evaluated in terms of

<sup>&</sup>lt;sup>22</sup>Walter Nardelli, "An Analysis of Drop-Outs of Freshman," Junior College Journal, Vol. 32 (November, 1961), p. 123.

overt behavior idiosyncracies such as student criticism, inability to think abstractly, and adherence to sopism."<sup>23</sup>

In a study of under-achievers, Combs found that under-achievers differed from achievers in the following ways:

- 1. They saw themselves as less adequate.
- 2. They saw themselves as less acceptable to others.
- 3. They saw themselves as less acceptable.
- 4. They saw adults as less acceptable.
- 5. They showed an inefficient and less acceptable approach to problems.
- They showed less freedom and adequacy of emotional expression.<sup>24</sup>

Combs drew the following implications from his

study:

- 1. Underachievement must be understood to be a completely personal and consistent adaptation of the underachiever to his needs and capacities as he uniquely experiences them.
- 2. A common determinant of how well one will be able to function is his feeling of capability of functioning. Many times for the underachiever educational experiences are perceived by him and are thus experienced by him as being largely non-facilitating experiences.

<sup>&</sup>lt;sup>23</sup><u>Ibid</u>., pp. 124-125.

<sup>&</sup>lt;sup>24</sup>Charles F. Combs, "Perception of Self and Scholastic Under-achievement in the Academically Capable," <u>The Personnel and Guidance Journal</u>, Vol. XLIII, No. 9 (September, 1964), p. 50.

3. The underachiever fails to achieve because he lacks a feeling of personal adequacy. He feels unacceptable and thus cannot invest in others or run the risk of failure.<sup>25</sup>

In McKenzie's study, it was pointed out that underachievers tend to "externalize" their conflicts. They harbor a good deal of aggression. They seem to be dependent for direction upon other people who may be perceived as having little respect for their rights. This may generate hostility.<sup>26</sup> Under-achievers were characterized as impulsive, lacking long range goals, and dependent for guidance upon standards of others. Often they act out their resentment and repudiate these standards.<sup>27</sup>

DeSena concluded from his study that common nonintellectual factors in the areas of interests, personality, problem areas, values, personal background, and academic and social adjustment to college can be identified and do characterize and distinguish the under-, normal-, and over-achievers.<sup>28</sup>

<sup>26</sup>James D. McKenzie, Jr., "The Dynamic of Devient Achievement," <u>The Personnel and Guidance Journal</u>, Vol. XLII, No. 7 (March, 1964), p. 685.

<sup>27</sup><u>Ibid</u>., p. 686.

<sup>28</sup>Paul A. DeSena, "The Role of Consistency in Identifying Characteristics of Three Levels of Achievement," <u>The Personnel and Guidance Journal</u>, Vol. XLIII, No. 2 (October, 1964), p. 147.

<sup>&</sup>lt;sup>25</sup>Ibid., p. 51.

In another study DeSena reached the conclusion that the difference between the academically successful and failing students of comparable intelligence may be mainly one of certain personality characteristics such as attitude, set, and motivation toward scholastic activities.<sup>29</sup>

Powell and Jourard investigated some nonintellectual factors involved in academic underachievement. They found from the evidence obtained that the under-achieving student may be described as an immature and dependent person who is experiencing difficulty in sex-role identification and who is unable to form meaningful relationships with peers.<sup>30</sup>

In a recent review, Taylor stated the following:

In general, the following factors have been found positively related to level of achievement.

- 1. The degree to which a student is able to handle himself and anxiety.
- 2. The value a student places upon his own worth.
- 3. The ability to conform to authority demands.
- 4. Student acceptance by peers.

<sup>&</sup>lt;sup>29</sup>Paul A. DeSena, "The Effectiveness of Two Study Habits Inventories in Predicting Consistent Over-Under-and Normal Achievement in College," Journal of Counseling Psychology, Vol. 11, No. 4 (Winter, 1964), p. 392.

<sup>&</sup>lt;sup>30</sup>W. James Powell and Sidney M. Jourard, "Some Objective Evidence of Immaturity in Under-achieving College Students," <u>Journal of Counseling</u> <u>Psychology</u>, Vol. 10, No. 1 (Fall, 1963), p. 281.

- 5. Less conflict over independence-dependence.
- 6. Activities centered around academic interests.
- 7. The realism of his goals.<sup>31</sup>

Present Experimental Programs for Under-achieving Students

Recognition of the post-high school educational problem relative to students with low ability and students with under-achievement has led institutions of higher learning to design experimental programs in an attempt to provide realistically such students with the opportunity for further education. An underlying function of such programs is to identify the under-achiever, and through remedial courses and extensive guidance to give him a socalled "second chance" to realize his potential. Valuable human resources may thus be salvaged.

Although frequent references in the literature were made to experimental remedial programs which are now in operation on campuses across the nation, specific studies concerning such programs have either not been done or are not completed as there is little evidence of this type of research in the existing literature.

Experimental remedial programs at three institutions

<sup>&</sup>lt;sup>31</sup>Ronald G. Taylor, "Personality Traits and Discrepant Achievement: A Review," Journal of Counseling Psychology, Vol. 11, No. 1 (Spring, 1964), p. 81.

of higher learning were described in the literature: (1) the summer On Trial Program at the University of Georgia, (2) Operation Second Chance at the Bronx Community College, and (3) Program O at Bakersfield College.

Childers described and evaluated the success of borderline inadmissable students to the University of Georgia. These students elected to attend the summer On Trial Program. Fifty-eight boys and thirty girls comprised this first experimental group. During the summer quarter each student carried a normal academic load of fifteen These courses were pertinent to the credit hours. individual's proposed curriculum and included no skill Success in the program was determined by a "C" courses. grade in two of three courses. Meeting this criterion, the student was admitted in good standing into the fall quarter freshman class. At the end of the initial program thirty boys and sixteen girls were eligible to return to college.

A longitudinal study was conducted on this group. At the end of three quarters of attendance, eighty percent of the original members of the group had either withdrawn or were ineligible to continue their university studies.<sup>32</sup>

<sup>32</sup>Perry R. Childers, "The Two-phase Analysis of the Summer On Trial Program at the University of Georgia," <u>The</u> <u>Personnel and Guidance Journal</u>, Vol. XLIII, No. 9 (May, 1965), pp. 929, 931-932.

Childers stated, "It was concluded that the odds were heavily against eventual success for the types studied."<sup>33</sup> However, a tendency toward good academic standing was found in those students who remained in attendance through Fall and Winter Quarters.<sup>34</sup>

Childers suggested, "Motivation plays a large role in the relative success of these students who must demonstrate their ability to do college work before being admitted as a regular freshman."<sup>35</sup> He concluded, "It seems reasonable to conclude that there are factors other than scholastic aptitude as measured by S.A.T. and high school records which contribute toward college success in terms of college grades. If motivation can be inferred, its role would appear to make a large contribution to the eventual success of students who fall into the category of borderline "inadmissable."<sup>36</sup>

The above study indicates an attempt by the University of Georgia to give "borderline inadmissables" an opportunity to qualify themselves for fall admission as regular freshmen. These students who are On Trial are

<sup>33</sup><u>Ibid</u>., p. 929.
<sup>34</sup><u>Ibid</u>., p. 922.
<sup>35</sup><u>Ibid</u>., p. 930.
<sup>36</sup>Childers, <u>loc</u>. cit.

only a select few who are close to qualifying for admission. Students who fall far short of qualifying do not have the opportunity to participate in this program. It would appear that many under-achievers who might benefit by such an opportunity are lost to the university. Also it might be assumed that any student who does not qualify for regular university admission might need remedial work in skill areas and effective counseling. The summer On Trial Program included only college level courses, and students had to carry a full fifteen hours of credit. This would appear as a definite handicap to a borderline student and certainly might insure a high rate of attrition. Avoidance of above mentioned weaknesses in the program described should be considered in designing a program for students who do not meet regular admission requirements.

Meister, Tauber, and Silverman described Operation Second Chance, which was an experimental program at Bronx Community College. In 1958 the college engaged in a study of the community it was established to serve. The survey revealed that many young people in the community were not able to adequately satisfy their higher educational needs. These students were rejected from publicly supported colleges because of poor high school records and low admission test scores. Many of these rejectees were the first in their families to seek admission to college and many came from culturally and/or educationally deprived backgrounds. Denial of further educational opportunity compounded their earlier deprivations.<sup>37</sup> For this group the Bronx Community College developed Operation Second Chance. From February to June, 1960, a group of twenty students received tuitionfree guidance and instruction for four nights a week. From September, 1960, to February, 1961, a second group of forty worked in the program. Both groups were provided with special guidance and instruction in English language and mathematics. All students had been denied admission to college. The program was to determine what effects additional special preparation for college would have and to what extent inadequacies of previous social, economic, educational, or cultural deprivation could be overcome. $^{38}$ 

The staff and students, subjectively, reached the following conclusions:

- 1. Thousands of high school graduates now rejected by colleges could, with special treatment and appropriate programs, profit significantly from higher education.
- 2. The instruments employed in the highest stratum of ability do not predict with equal accuracy the performance of students at other levels.

<sup>&</sup>lt;sup>37</sup>Morris Meister, Abraham Tauber, and Sidney Silverman, "Operation Second Chance," Junior College Journal, Vol. 33 (October, 1962), p. 81.

- 3. Much evidence of unreleased academic potential emerged when an opportunity was given in this program to overcome previous deprivations.
- 4. Positive changes were achieved in attitude, in amount of scholastic work attempted, in intensification of already high motivation for learning and in the development of realistic educational aspirations. . . .
- 5. A strong guidance program and a "speeded-down" curriculum can promote academic progress in higher education for students with other than top abilities, suggesting radical revisions in traditional college programming.<sup>39</sup>

Bronx Community College has offered rejectees from college admission an opportunity to strengthen their skills in English and mathematics and has provided guidance for such students. Realization of a need for remedial work and guidance was a strength in Operation Second Chance. Only a small group of students were involved in the program and a follow-up study of their progress over a two-year period of time was not made. Conclusions were drawn subjectively rather than from quantified data relative to the value of the program and student achievement as a result of the program. These weaknesses are evident and should be avoided in a research study.

As a rationale for the emergence of Program O at Bakersfield College, California, Collins wrote the following:

<sup>&</sup>lt;sup>39</sup><u>Ibid</u>., pp. 82-83.

There are two approaches to the problem of meeting the need of the heterogeneous student bodies that attend California junior colleges. One approach is to admit all into regular college classes and then "flunk out the chaff." The other approach is to live up to the philosophies adopted by most junior colleges by presenting a program which is designed to provide another opportunity for those who are academically deficient and/or intellectually limited.

The rationale of this latter approach can be stated simply as serving both the needs of students and the interests of the institution by:

- 1. Permitting an early identification of students of low academic potential and/or achievement.
- 2. Removing this category of student from regular college classes where they may impede progress.
- 3. Providing intensive remedial training in order to assist this category of student to repair deficiencies.
- 4. Helping this category of student make a satisfactory adjustment if it becomes apparent that they cannot succeed in a college program.
- 5. Improving the academic climate of a collegiate institution by early elimination of those who cannot profit from even this level of instruction.<sup>40</sup>

Program O is a special remedial program which has been functioning since 1956. Students for this program are selected on the basis of SCAT and English Classification test scores. Students scoring below the tenth percentile are required to enroll in remedial courses in social

<sup>&</sup>lt;sup>40</sup>John J. Collins, "Meeting the Needs of the Less Able Junior College Student," San Francisco: A.P.G.A. Conference, March, 1964, Bakersfield College, California, p. 2. (Mimeographed.)

sciences, mathematics, and English. Students who are deficient in two of these three areas are classified as Program O students. They are assigned to a special counselor who works intensively to help them assess their capabilities, limitations, interests, and personality characteristics. Special orientation classes are scheduled in the program. Goal identification and motivation are prime subjects for discussion.<sup>41</sup>

Program O students enter on probation and have only one semester to prove themselves. If they fail to maintain a 1.5 grade point average (on a 4 point scale) during the Program O semester, they are subject to disqualification. If they achieve a 1.5 grade point average during the first semester, they are removed from probation, but must make a grade of "C" in assigned remedial classes before progressing to the next level.<sup>42</sup>

Collins reported on a three-year follow-up study on Program O students who began the program in the fall of 1959. The following table indicates the degree of retention attained by this particular group of students over a three year period.

> <sup>41</sup><u>Ibid</u>., pp. 2-3. <sup>42</sup><u>Ibid</u>., pp. 3-4.

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1959 Program O: Re	etention	Record	for	Three	Years
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Year	Number of Students	% Retention
1959 Fall	98	47%
1960 Spring	46	28%
1960 Fall	27	22%
1961 Spring	22	20%
1961 Fall	20	12%
1962 Spring	12	43

Candidates for graduation, Spring, 1962 - 4 - 4%

For the same group of students Collins offered the following data relative to the reason for which the fall of 1959 Program O students dropped out of college.

Entering class Total dropping out in the course	of	six	semesters	98 86
Reasons for withdrawal:			. ,	
Academic failure	37		43%	
Employment	15		17%	
Armed forces	4		5%	
Non-attendance	4		5%	
Transfer to another college	4		5%	
Illness	2		2%	
Marriages	l		1%	
Unknown	19		22%	
	86	_	100% 41	ł

The following evaluation of Program O was stated by

Collins:

1. A significant improvement in standards has been reported by instructors of college classes which formerly were hampered by the presence of Program O level students.

43<u>Ibid</u>., p. 4.

- 2. Program O instructors report that their students are conscientious and motivated. They feel that many of them are working at maximum effort.
- 3. The tenth percentile seems to be a reasonable cut-off point.
- 4. Attention and general attitudes in Program O classes are felt to be as good as in most classes.
- 5. Ability is only one of the critical criteria of success with this group. However, an IQ of 90 or above seems, in general, to be correlated with academic success.
- 6. It is felt that the general fund of knowledge and skills of these students have been increased. Deficiencies have been repaired and some students have been salvaged.
- 7. The program is highly dependent on sensitive and competent counseling and instruction.
- 8. The program definitely has promise. Refinements will be in order after further study.<sup>45</sup>

The following strengths seem to be indicated in

Program O:

- Realization that both low ability and underachieving students comprise such a group.
- 2. Cognizance that remedial courses, competent instruction, and individual and group guidance should attempt to meet individual needs.
- 3. Specific admission and retention standards have been set for Program O students.

<sup>45&</sup>lt;sub>Ibid</sub>., p. 5.

4. Awareness of the fact that factors other than ability are critical criteria of academic success with this group.

It would seem that the above strengths should be considered and incorporated into the design of any program which would serve this category of student.

Conclusions from the study of Program O were based upon objective and quantified data and a follow-up study of the initial participating group. Such conclusions would appear to be more significant than those based upon a more subjective approach.

No mention was made that any changes in the basic program have been made since its inception. It would seem that with such an experimental program new or different techniques of instruction, course content, and counseling services would have been generated in an attempt to improve the program and thus meet the needs of more and more of its students.

#### Summary

A review of the research pertaining to the problem of low ability and under-achieving high school graduates seeking admission to institutions of higher learning reveals a depth of interest by educators and the American public. For the most part the summary material is comprised of author's statements emphasizing the importance of an opportunity for higher education commensurate with individual needs and ability for all those who seek such education and suggestions and recommendations relative to various types of programs which might be designed to meet the needs of low-achieving students. Most of these authors seem to feel that the junior college with its "open-door" philosophy should assume this responsibility. In order to assume such a responsibility and to initiate a means of carrying it out, there must be both an ability to recognize and a focusing in the institutional program upon individual needs.

It is pointed out in the literature that many different factors such as social, economic, and personal are related to the academic success of under-achieving students. Ability alone does not insure successful scholastic performance. Several authors have pointed out that the under-achiever has certain characteristics which differentiate him from other students: (1) feelings of personal inadequacy, (2) feelings of less acceptability, (3) feelings of dependency, (4) feelings of hostility, (5) lack of long range goals, (6) externalization of conflicts, (7) inability to handle anxiety, and (8) resistence to authority. His educational progress will be determined largely by the type of instruction and guidance he receives.

It is repeatedly pointed out in the literature that a number of institutions of higher learning have designed special programs or have made special provisions for lowachieving students. Although such programs do exist, there are very few which have been reported in detailed evaluations of their outcomes. The University of Georgia, Bronx Community College, and Bakersfield College, California have included in their curriculums special programs for the low-achieving high school graduate. These programs have been described in this chapter.

Professional educators who were involved in each of the above programs seemed to agree that: (1) some students, even though the percentage was small, were salvaged for further academic training, (2) the program might be judged as successful, (3) the need for such programs for low-achieving graduates was evident, (4) focus should be placed on the development of such programs, and (5) factors other than ability were critical criteria in determining the academic success of this particular category of student.

#### CHAPTER III

#### DESIGN AND METHODOLOGY

Definition of the Population

Junior colleges vary in location, size, and curriculum emphasis. The characteristics of their students also vary. Thus no particular college can be classed as a "typical" institution. For this reason it is necessary to describe Grand Rapids Junior College and its total student body from which the Control Group and Developmental Groups I and II were drawn for this study.

Grand Rapids Junior College is located in the central part of Grand Rapids, Michigan. The college was established in 1914 in response to a desire within the community to offer an opportunity for education beyond the high school level to its young men and women, particularly those who could not afford to attend school elsewhere. Α study of the school's development since that time reveals growth in many areas: an increase in enrollment; a wider range in student ages (16-60); an increase in the diversity in courses and curriculums; an expansion of physical facilities; an improvement in the training of staff and administrative personnel; a broadened geographic base of student admission to include individuals from other parts of the state, from out-of-state, and from foreign countries; and an expansion of evening college

admissions for adults seeking either educational enrichment or additional vocational and/or academic training.

Although many rather dramatic changes have taken place within Grand Rapids Junior College, it has remained an urban public college operating under the direction and jurisdiction of the Grand Rapids Board of Education. The basic "open-door" philosophy of offering every student who seeks admission the opportunity to obtain further education has never changed. The Board of Education has been aware of the primary function of the college which is to serve the needs of the community and has continually encouraged curriculum expansion in order to serve students with a wider range of interests.

At the beginning the college served a selective student body: students who were oriented toward the professions. Thus only pre-professional parallel curriculums preparing students for transfer to a fouryear college or university were offered during the early years. Throughout the years this type of curriculum has been emphasized with new areas of study being added. All courses satisfactorily completed in curriculums parallel to those in four-year institutions have full transfer credit as the college is accredited by the North Central Association, and a large majority of the students who graduate from the parallel programs do transfer to fouryear colleges.

This kind of education, however, did not meet the needs of all of the young people in the community who desired training beyond that offered at the high school level, and eventually a variety of two-year terminal technical programs preparing students to enter the world of work were added. In addition, enrichment and advanced placement programs for high school students were added and are still being offered.

The years from which the samples were drawn, 1957-1958, 1960-1961, and 1961-1962 give a good idea of the growth pattern of Grand Rapids Junior College during recent years. It was from these academic years that students in the three groups in this study were selected. The Control Group is a sample selected from the 1957-1958 student population, Developmental Group I is a sample selected from the 1960-1961 student population, and Developmental Group II is a sample selected from the 1961-1962 student population. The total enrollment figures for the above specified years include both day and evening students. A breakdown of men and women enrollees is not available for 1957-1958.

#### TABLE 3.1

Distributions of Populations from Which Samples Were Drawn

Academic Year	Number of Men	Number of Women	Total
1957-1958 1960-1961 1961-1962	1710 1787	941 1206	1730 2651 2993

## Description of the Sample

From the populations previously described, three groups of students were selected which constitute the basis for this study. Developmental Group I consists of all seventy-seven students who participated in the first experimental Developmental Program which began in the fall semester of 1960. Developmental Group II consists of all seventy-eight students who participated in the second experimental Developmental Program which began in the spring semester of 1962. Admission was delayed one semester for the second group in order to determine if this single differentiating factor would have a positive effect on the academic performance of the second group as compared with the academic performance of the first group.

Students in Developmental Groups I and II were admitted on a one-semester trial basis to a Developmental Program in which course selection was limited to remedial subjects. The number of credit hours taken by each student was also limited. The criterion for successful academic performance in the Developmental Program was the achievement of a 2.0 grade point average at the end of the semester. "Successful" students in both groups were allowed to continue in the curriculum of their choice. Their attendance at Grand Rapids Junior College in subsequent semesters was dependent upon the all-college regulations of academic selective retention.<sup>1</sup>

During the five-semester follow-up study of the students in both groups it was necessary to omit five individuals from Developmental Group I and two individuals from Developmental Group II thus leaving totals of seventytwo and seventy-six subjects respectively. The seven students were omitted from the study because of the unusual circumstances under which they were able to continue in the program. Each was dismissed at the termination of the Developmental semester because he failed to achieve a 2.0 grade point average. Later, however, through a special administrative decision, they were re-admitted to Grand Rapids Junior College while other Developmental students who had been similarly dismissed were not permitted to re-enter.

<sup>&</sup>lt;sup>1</sup>The all-college regulations for academic selective retention are stated in Chapter I, pages 12-13.

The Control Group consisted of fifty-six students who entered Grand Rapids Junior College at the beginning of the fall semester of 1957. It was decided to select a sample of this particular freshman class because it was the closest in time to the origin of the Developmental Program for which complete data on the students were available. Students in the Control Group were all of those in the 1957 freshman class who, because of their qualifications, would have been selected for the Developmental Program had it been in existence at that time. Control Group students were admitted without restriction relative to course and curriculum selection. Their continued attendance at Grand Rapids Junior College depended upon their ability to maintain a 2.0 grade point average. Those who did not earn the necessary grade point average were placed on probation pending a dismissal action.

Thus, each of the three groups was comprised of all of the students who met the qualifications of a Developmental student at the time of their admission. Developmental students were classified on the basis of the following criteria:

- 1. High school graduate.
- 2. Overall high school academic grade point average of 1.5 or lower on a 4 point scale

for grades nine through twelve, inclusive. Academic grade point average included only the grades of those high school subjects which are usually referred to as "solids" such as English, mathematics, social sciences, sciences, and foreign languages.

Grade point average was determined on the following basis:

1. A: 4 grade points per unit earned.

- 2. B: 3 grade points per unit earned.
- 3. C: 2 grade points per unit earned.
- 4. D: 1 grade point per unit earned.
- 5. F: O grade points per unit earned.

Table 3.2 shows the main characteristics of each of the groups selected for study.

## TABLE 3.2

# Characteristics of the Control Group, Developmental Group I, and Developmental Group II

Group			Number ( Men	of	Number of Women	Age <b>-</b> Range	Average Age
Control Group Developmental Developmental	Group Group	I II	48 62 68		8 10 8	17-24 17-24 17-24	20.5 20.5 20.5

Five standardized tests were administered to all students in Developmental Groups I and II during the first

week of Developmental classes. They were the <u>School and</u> <u>College Ability Test, Form 2, Cooperative English Mechanics</u> <u>Test, Cooperative C-2 Reading Test, Otis Quick Scoring</u> <u>Mental Ability Test, Gamma Form, and Raven's Progressive</u> <u>Matrices Test, Form 1938</u>.

The <u>School and College Ability Test</u>, Form 2, is an achievement test. It "aids in estimating the capacity of a student to undertake the academic work of the next higher lever of schooling."<sup>2</sup> This test was selected because it "measures the two kinds of school-related abilities which are most important in the greatest number of school and college endeavors: verbal and quantitative."<sup>3</sup> The test yields three scores: a verbal score, a quantitative score, and a total score. Level 1A, constructed for use with college freshmen and sophomores, was used in this study. The reliability coefficient for the total score of this test is .95.<sup>4</sup>

<u>The Cooperative English Mechanics Test</u> measures achievement in written expression. Proficiency in this area is basic to the entire educational process, and it was for this reason that an achievement test of this type

<sup>2</sup>Cooperative School and College Ability Tests, Manual for Interpreting Scores, Los Angeles: Educational Testing Service, Cooperative Test Division, (n.d.), p. 5.

> <sup>3</sup><u>Ibid</u>. <sup>4</sup>Ibid.

was selected. The reliability coefficient for the total score of this test is .84.5

The <u>Cooperative C-2 Reading Test</u> measures achievement in reading. Proficiency in reading is essential for good learning in schools, and it was for this reason that this type was selected. The reliability coefficient for the total score of this test is  $.92.^{6}$ 

The <u>Otis Quick Scoring Mental Ability Test</u>, <u>Gamma</u> <u>Form</u>, is a verbal test designed to measure mental ability which is defined "as thinking power or the degree of maturity of the mind."<sup>7</sup> Academic success is in part dependent on mental ability, and it was for this reason that a verbal IQ test was selected. The realiability coefficient for this test is .88.<sup>8</sup>

Raven's Progressive Matrices Test, Form 1938, is a non-verbal test which "can be used without a time limit in order to assess a person's maximum capacity for observation and clear thinking. It will indicate in a few minutes

<sup>&</sup>lt;sup>5</sup><u>Cooperative English Tests</u>, <u>Technical Report</u>, Los Angeles: Educational Testing Service, Cooperative Testing Service, 1960, p. 19.

<sup>6&</sup>lt;sub>Ibid</sub>.

<sup>70</sup>scar Krisen Buros (ed.), <u>The Fifth Mental</u> <u>Measurements Yearbook</u>, Highland Park, <u>New Jersey:</u> The Gryphon Press, 1959, p. 362. <u>8</u><u>Ibid</u>., p. 363.

whether a person can be regarded as intellectually dull, average, or bright."<sup>9</sup> Because many of the students in both Developmental groups were assumed to be poor readers, it was thought that a verbal IQ test would not be an accurate measure of their mental ability. This non-verbal test measuring observation and clear thinking was selected for that reason. The realiability coefficient for this test is .93.<sup>10</sup>

Some of the tests included sub-scores as well as total scores. In each case only the single total raw score was used in this study.

These tests were not administered to the Control Group because a study of this type was not comtemplated at the time the students in this group entered Grand Rapids Junior College.

To test for significant differences between the two Developmental groups five separate T-tests were calculated, one on each of the five variables, the five standardized test scores. Raw scores from each of the five standardized tests were the data used for this analysis. The purpose of the analysis was to determine if there was a significant difference between these two groups relative

<sup>&</sup>lt;sup>9</sup>J. C. Raven, <u>Guide</u> to the <u>Standard Progressive</u> <u>Matrices</u>, London, England: <u>H. K. Lewis and Company</u>, Ltd., 1960, p. 3.

<sup>&</sup>lt;sup>10</sup><u>Ibid</u>., p. 16.
to the following factors: achievement in verbal and quantitative areas, proficiency in English written expression, proficiency in reading (vocabulary and speed and level of comprehension), measurement in mental ability as indicated on a verbal basis, and measurement in mental ability as indicated on a non-verbal basis. The ultimate purpose of this analysis was to establish the homogeniety of these two groups. The results of the T-tests are in TABLE 3.3.

### TABLE 3.3

A Comparison of Mean Scores of Developmental Group I with Developmental Group II on Five Standardized Tests

Name of Test	Mean Group I	Scores Group II	T-Scores	Signifi- cance Level
<u>School and College</u> <u>Ability Test, Form 2</u>	3.9167	3.6842	•378	•25
Mechanics Test	•7500	.6105	.259	.25
<u>Cooperative C-2</u> <u>Reading Test</u> Otis Quick Scoring	•5278	.6184	.071	.40
Mental Ability Test, Gamma Form Raven's Progressive	.4861	.3681	.806	.10
Matrices Test, Form 1938	.4861	•5132	.040	•40

The results of the T-tests on each of the five variables, the five standardized test scores, did establish that there was no significant difference between Developmental Group I and Developmental Group II at the .05 level or behond relative to the factors measured by the standardized tests. In these respects the two groups were judged to be homogenious. However, homogeniety was established on only a few selected variables directly related to academic success. It was assumed that certain additional motivational factors, related to academic success but not easily measured might also be present and functioning within students in Developmental Group II who were prevented from enrolling until one semester after they had applied for admission. Therefore, data from Developmental Group I and Developmental Group II were treated as information from two separate and different groups.

# Hypotheses

The major hypothesis and sub-hypotheses, broadly stated in Chapter I and rooted in theory found in the related literature reported in Chapter II, were examined through analysis of cumulative college grade point averages for all the students who were members of the control and experimental groups. In order to determine the value of the Developmental Program at Grand Rapids Junior College in helping low-achieving high school graduates to obtain satisfactory college grade point averages, the following

hypothesis and sub-hypotheses were tested:

- 1. The cumulative grade point averages achieved by students in Developmental Group I and Developmental Group II during their enrollment in Grand Rapids Junior College will significantly exceed the cumulative grade point averages achieved by students in the Control Group during their enrollment in Grand Rapids Junior College.
  - (a) The proportion of students in Developmental Group II who successfully complete the Developmental Program will exceed the proportion of students in Developmental Group I who successfully complete the Developmental Program.
  - (b) The proportion of students in Developmental Group II who achieve a satisfactory grade point average while enrolled at Grand Rapids Junior College for each semester included in the study will exceed the proportion of students in Developmental Group I who achieved a satisfactory grade point average while enrolled at Grand Rapids Junior College for each semester included in the study.

In addition to testing the major hypothesis and subhypotheses related to an evaluation of the Developmental Program, an effort was also made to identify those social, economic, and personal factors which Grand Rapids Junior College Developmental students feel are related to academic success. Relative to this aspect of the study the following corollary was explored:

> Students in Developmental Group I and Developmental Group II will mention in structured interviews factors which they feel are significantly related to their academic success.

# Methodology

In order to test the major hypothesis, a follow-up study was conducted including each student in the Control Group and Developmental Groups I and II. This study entailed the examination of college cumulative grade point averages over a maximum period of four consecutive semesters beginning with the entering semester for the Control Group and a maximum period of five consecutive semesters (the Developmental semester plus the following four consecutive semesters) for Developmental Groups I and II. To test the major hypothesis, only the college cumulative grade point averages were used as it was felt that such averages are the most valid criterion upon which to judge academic success. The number of semesters selected for the follow-up study was arbitrarily determined on the basis that this would be the minimum period of time necessary to complete any curriculum at Grand Rapids Junior College.

For statistical analysis only the college cumulative grade point average up to and including the final semester each student attended was used. Since many

<sup>&</sup>lt;sup>11</sup>Successful academic performance for the Developmental semester was based on the completion of the Developmental courses with a grade point average of 2.0 on a 4 point scale. Continuation in school after the completion of the Developmental Program was based on factors described on pages 12-13.

of these students either dropped out of college or were dismissed from college because of low grade point averages, the last semester of their attendance was often prior to the semester in which the follow-up study was terminated. A one-way analysis of variance for unequal sub-classes was the statistic used to determine if a significant difference in cumulative grade point averages between the Control Group and Developmental Groups I and II did occur.

In order to test sub-hypothesis (a) the grade point averages at the end of the Developmental semester for students in Developmental Groups I and II were compared. Successful academic performance was determined by the student's achievement of a 2.0 grade point average or above on a 4 point scale for all courses in which he was enrolled. Analysis of this data was made by comparing the total number of successful students in Developmental Group I with the total number of successful students in Developmental Group II.

In order to test sub-hypothesis (b), the number of students in Developmental Group I and in Developmental Group II who successfully completed each successive academic semester in which they were enrolled was first totaled.<sup>12</sup> Analysis of this data was then made by

 $<sup>^{12}{\</sup>rm These}$  successive academic semesters followed completion of the Developmental semester.

comparing the percentage of students in Developmental Group I with the percentage of students in Developmental Group II who demonstrated successful academic performance under the all-college regulations of academic selective retention for each successive semester they were enrolled in Grand Rapids Junior College after completing the Developmental Program.

In order to explore the social, economic, and emotional factors thought to be related to the academic success of Grand Rapids Junior College students, structured interviews were held with each student in Developmental Group I and Developmental Group II following the completion of the final examinations for the courses taken during the Developmental semester. During the interview the student was also informed of the final decision relative to dismissal or continued attendance at Grand Rapids Junior College.

Questions which were formulated as the basis for the structured interviews were designed to gain information relative to the student's thoughts about economic, social, and emotional factors **b**elieved to have a significant influence upon his ability to maintain a satisfactory grade point average in the Developmental Program. These questions were developed by the staff of the Grand Rapids Junior College Counseling Center whose judgment was based

upon logic and experience. The questions which were the basis for the structured interviews were as follows:

Evaluation of the Developmental Program

- 1. Which one of the following statements best describes your feelings about the Developmental Program when you entered college?
  - a. I was happy about it.
  - b. I was grateful for the chance to enter the program.
  - c. I was not too happy about being in this program.
  - d. I was disappointed that I had to be in this program.
  - e. I had no opinion one way or the other.
- 2. Which of the following statements best describes your feelings about the Developmental Program at this time?
  - a. I think it was worthwhile.
  - b. I think it was of some value.
  - c. I think it was of little value.
  - d. I think it was of no value.
  - e. I have no opinion one way or the other.

# Financial Situation

1. Which of the following statements best describes your position relative to financial support?

a. I am completely self-supporting.

- b. I am partially self-supporting.
- c. I am not self-supporting.
- 2. If you work, how many hours per week have you been working?

# Social Situation

- 1. Are you married?
- 2. Do you live at home?
- 3. If you live at home, do you make your home with:
  - a. Both of your parents?
  - b. Your father only?
  - c. Your mother only?
  - d. One parent and a step-parent?
- 4. Are one or both of your parents college graduates?
  - a. One.
  - b. Both.
  - c. Neither.
- 5. Do you have older brothers and/or sisters who have attended or are attending college?
- 6. Did your parent or parents <u>insist</u> that you attend college?
- 7. Which of the following phrases best describes the amount of encouragement that your family has given you to attend college?
  - a. A great deal of encouragement.
  - b. Some encouragement.
  - c. Little encouragement.
  - d. No encouragement.

8. Have you had a suitable place to study by yourself at home?

# Emotional Situation

- 1. Are you presently subject to the draft?
- 2. Do you have any physical handicaps or disabilities?
- 3. Did you expect that college would provide the answer to a long range vocational goal?
- 4. Did you expect that college would provide the answer in the area of social contacts?
- 5. If you have been unsuccessful in the Developmental Program, which of the following three problems do you feel contributed the most to your lack of success?
  - a. Financial problems.
  - b. Family problems.
  - c. Personal Problems.
- 6. Which of the following do you feel contributed the most to what academic success you had?
  - a. Lack of financial problems.
  - b. Lack of family problems.
  - c. Lack of personal problems.
- 7. At the present time do you feel that you have personal problems which are too difficult for you to solve in your present situation?
- 8. Which of the following words best describes the contact you had with a counselor in the Counseling Center during the past semester?

a. Once.

- b. Occasionally.
- c. Frequently.
- d. Never.

Analysis of this data was made by analyzing the responses of students in both Developmental Groups in an attempt to determine if any of the designated factors were thought by students to have a significant effect on their academic performance. A comparison was also made of the responses made by students in each of the two Developmental groups. The purpose of such a comparison was to determine if both groups thought the same factors had significant effects on their academic performance even though the students in Developmental Group II had been delayed one semester before they were admitted to the college. A comparison was also made of the responses of the "successful" and "unsuccessful" students in both groups. This comparison was made in the same manner as the one described above with the same underlying purpose.

# Summary

The following procedure was used in obtaining subjects for this study. Three groups of students from Grand Rapids Junior College were selected for study. All students in these groups were low-achieving high school graduates with a high school academic grade point average of 1.5 or lower on a 4 point scale. The Control Group, was comprised of all students in the above category who entered Grand Rapids Junior College at the beginning of the fall semester, 1957 when no Developmental Program existed. Developmental Group I consisted of all the lowachieving high school graduates who entered Grand Rapids Junior College at the beginning of the fall semester of 1960. Developmental Group II included all the lowachieving high school students who entered Grand Rapids Junior College at the beginning of the spring semester of 1961.

The Control Group was admitted to Grand Rapids Junior College without any restrictions relative to course and curriculum selection. Their continued attendance depended upon their ability to maintain a 2.0 grade point average. Those who did not earn the necessary grade point average at the end of each semester were placed on academic probation pending dismissal.

Developmental Groups I and II were admitted on a one-semester trial basis to a Developmental Program in which course selection was limited to remedial subjects. The number of credit hours was also limited. The criterion for successful academic performance in the Developmental Program was the achievement of a 2.0 grade point average at the end of the semester. Those students in both groups who were designated as "successful" were allowed

to continue in the curriculum of their choice. Their continued attendance at Grand Rapids Junior College depended upon the all-college regulations of academic selective retention. Only one difference existed between Developmental Group I and Developmental Group II: admission was delayed one semester for the latter group in order to determine if this single differentiating factor would have any effect on their academic performance.

A follow-up study of college cumulative grade point averages was conducted for all three groups during the four semesters they were expected to be in attendance at Grand Rapids Junior College in order to complete any curriculum.

The proportion of students from both Developmental groups who successfully completed the Developmental Program and each successive academic semester while in attendance at Grand Rapids Junior College was recorded and comparisons were made.

Structured individual interviews were conducted at the time of completion of the Developmental Program with all students in Developmental Groups I and II. These sessions were structured around questions designed to obtain information concerning economic, social, and emotional factors thought by the students to be related to their academic success in Grand Rapids Junior College.

## CHAPTER IV

### ANALYSIS OF DATA

In this chapter the statistical hypothesis and sub-hypotheses are presented along with an analysis of the data including that gathered from structured interviews with the subjects. A summary concludes the chapter.

Comparison of College Cumulative Grade Point Averages of the Three Groups Studied

The central purpose of this study was to evaluate the effectiveness of the Developmental Program at Grand Rapids Junior College in preparing low-achieving high school graduates to perform successfully at the college level. The major statistical hypothesis was:

> No difference will be found between the cumulative grade point averages achieved by students in Developmental Group I and Developmental Group II during their enrollment in Grand Rapids Junior College and the cumulative grade point averages achieved by students in the Control Group during their enrollment in Grand Rapids Junior College.

In order to test this hypothesis, the cumulative grade point averages at Grand Rapids Junior College were calculated for all students over a maximum period of four consecutive semesters for the Control Group and a maximum of five consecutive semesters at Grand Rapids Junior College (the Developmental semester plus the following four consecutive semesters) for Developmental Groups I and II.<sup>1</sup>

For statistical analysis the cumulative grade point averages for the period up to and including the last semester each student in all three groups was in attendance at Grand Rapids Junior College were used. Grade point averages for Developmental Groups I and II were combined. The results are in TABLE 4.1.

A one-way analysis of variance for unequal subclasses was then used with the above data to determine if students in Developmental Groups I and II were significantly more successful academically than students in the Control Group. The analysis of variance for between groups resulted in an F statistic of 3.30802 which was found to be significant at the .05 level.

Comparison of the Numbers of Students in the Two Developmental Groups Who Successfully Completed the Developmental Program

As a further basis for analysis and evaluation of the Developmental Program at Grand Rapids Junior College sub-hypothesis (a) was:

> The proportion of students in Developmental Group II who successfully complete the Developmental Program will exceed the

<sup>&</sup>lt;sup>1</sup>Other details of this follow-up study were presented in Chapter III.

TABLE 4.1

# Grade Point Averages of the Three Groups Studied for Each Semester of Enrollment at Grand Rapids Junior College

;al	G. P. A.	.943	1.32	1.41	
Tot	No. of Stu- dents	56	72	26	
th ege ster	G•P•A•	1.08	1.21	1.99	
Four Coll Seme	No. of Stu- dents	14	œ	17	
d ege ster	G.P.A.	1.56	1.70	1.75	
Thir Coll Seme	No. of Stu- dents	18	σ	54	
nd .ege ster	G P A	1.09	1.24	1.44	
Secc Coll Seme	No. of Stu- dents	36	74	33	
st ege sster	G P A	1•04	1.34	1•47	
Firs Coll Seme	No. of Stu- dents	56	19	48	
mental ster	G. P.A.		1.002	1.880	
Develor Semes	No. of Stu- dents		72	76	
Group		Control	Develop- mental Group I	Develop- mental Group II	

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proportion of students in Developmental Group I who successfully complete the Developmental Program.

In order to test sub-hypothesis (a), the follow-up procedure described above was used. Only the final grade point average of each student at the end of the Developmental semester was used. Successful academic performance was determined by the student's achievement of a 2.0 grade point average on a 4 point scale for the total Developmental Program. The number of students in each group who successfully completed the Developmental Program was recorded and the percentage of successful students in each group was computed. Analysis of the data was made by comparing the proportion of students in Developmental Group I with the proportion in Developmental Group II who evidenced successful academic performance for the Developmental semester. The results are in TABLE 4.2.

The proportion of students in Developmental Group I and in Developmental Group II who successfully completed the Developmental Program at Grand Rapids Junior College indicate that the retention of students in Developmental Group II was over 30% greater than in Developmental Group I at the end of the Developmental semester. Thus the number of students in Developmental Group II who successfully completed the Developmental Program did exceed the number

of students in Developmental Group I by a large margin.

Comparison of Academically Successful Students in Developmental Group I and Developmental Group II

As a basis for further analyzation and evaluation of the Developmental Program at Grand Rapids Junior College, sub-hypothesis (b) was also formulated. It is:

> The proportion of students in Developmental Group II who achieve a satisfactory grade point average while enrolled at Grand Rapids Junior College for each semester included in the study will exceed the proportion of students in Developmental Group I who achieved a satisfactory grade point average while enrolled at Grand Rapids Junior College for each semester included in the study.

In order to test sub-hypothesis (b), the followup procedure described earlier was used. By this means the proportion of students from each Developmental group who successfully completed each successive academic semester included in the study was determined.<sup>2</sup> The percentage of students in each original group who successfully completed each successive semester was computed. Analysis of the data was made by comparing the proportion of students in Developmental Group I who demonstrated successful academic performance with the proportion who successfully performed in Developmental

<sup>&</sup>lt;sup>2</sup>Successful academic performance was defined in Chapter I, pages 12-13.

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Group II during each semester of the study. The results are in TABLE 4.2.

The proportion of academically successful students in each Developmental group during five successive semesters at Grand Rapids Junior College indicates that in every semester included in the study retention of students from Developmental Group II was over 30% greater than the retention of students from Developmental Group I. Thus the academic performance of students in Developmental Group II did exceed the academic performance of students in Developmental Group I during the period of this study.

# Factors Which Developmental Students Feel Have An Effect on Their Academic Success

Researchers have postulated that academic success is not entirely dependent on mental ability; other factors also effect the scholastic achievement of individuals. In evaluating the Developmental Program at Grand Rapids Junior College this notion was carefully analyzed in order to ascertain those factors which might have been controlled or modified by the Developmental Program. Relative to this notion the following corollary was developed for the study.

> Students in Developmental Group I and Developmental Group II will mention in structured interviews factors which they feel are significantly related to their academic success.

TABLE 4.2

Percent of Students in Developmental Group I and Developmental Group II Who Successfully Completed Each Successive Semester at Grand Rapids Junior College

Group	Developme Semeste	intal ir	Fir Col Sem	st lege ester	Ser	cond Llege nester	Thi Col Seme	.rd .lege :ster	Fourt Colle Semes	h ge ter
	Number of Students Entered	Percen- tage of Total Group	No.	R	No.	K	No.	K	No.	K
Developmental Group I	72	37.50	19	26.39	14	19.44	σ	12.50	8 11	•11
Developmental Group II	76	69.74	48	63.16	33	43.42	24	31.63	17 22	• 37

In order to discover those non-aptitude factors thought by students to be related to their academic success a structured interview with each student was held following completion of the final examinations for the courses taken during the Developmental semester. Interviews were held with each student in both Developmental Group I and Developmental Group II. Questions which were formulated as the basis for the interviews were designed to gain information relative to the student's feelings about economic, social, and emotional factors having a significant influence on his academic success or lack of it in the Developmental Program.<sup>3</sup>

Analysis of the data obtained from the individual structured interviews was made by comparing the percentage of students who responded in a particular way to each question. A comparison was also made between the responses of "successful" and "unsuccessful" students in both groups. The results are in TABLES 4.3, 4.4, 4.5, and 4.6.

<sup>&</sup>lt;sup>3</sup>The structured questions used in the individual interviews were stated in Chapter III.

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Feelings of Students in Developmental Groups I and II About the Developmental Program

Question 1 (Pr4	e-col	lege fe	eling	s about	Devel	opmental	Progr	am)		
Group	Hap	py	Gra	teful	Not	Happy	Disa	ppointed	No C	pinion
	No.	R	No.	R	No.	₽6	No.	R	No.	R
Developmental Group I (N=72)	2	2.78	30	41.67	23	31.94	7	9.72	10	13.89
Successful Students (N=19)	0	10.53	10	52.63	4	21.05	m	15.79		
Unsuccessful Students (N=53)			20	37.74	19	35.85	4	7.55	10	18.87
Developmental Group II (N=76)	20	26.32	27	35•53	19	25.00	N	2.63	ω	10.53
Successful Students (N=48)	20	41 <b>.</b> 67	25	52.08	m	6.25				
Unsuccessful Students (N=28)			2	7.14	16	57.14	CJ	7.14	ω	28.57
Total (N=148)	22	14.86	57	38.51	42	28.38	σ	6.08	18	12.16
Successful Students (N=67)	22	32.84	35	52.23	7	10.45	m	4.48		
Unsuccessful Students (N=81)			22	27.16	35	43 <b>.</b> 21	9	74.07	18	22.47

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Question 2 (Feelings	about I	Jevelopm	len <b>t</b> al	Program	after	Completi	on of	the Prog.	ram)	
Group	Wort	ıwhile	Some	Value	Litt.	le Value	No	Value	No Op	inion
	No.	26	No.	R	No.	R	No.	K	No.	R
Developmental Group I (N=72)	53	73.61	14	19.44	4	55.56	Ч	1.39		
Successful Students (N=19)	15	78.95	4	21.05						
Unsuccessful Students (N=53)	38	71.70	10	18.87	4	7.55	Ч	18.87		
Developmental Group II (N=76)	57	75.00	12	16.32	9	7.89	Ч	1.32		
Successful Students (N=48)	τĦ	85.42	2	14.58						
Unsuccessful Students (N=28)	16	57.14	Ŋ	17.86	9	21.43	Ч	3.57		
Total (N=148)	110	74.32	26	17.57	10	6.76	N	1.35		
Successful Students (N=67)	56	83.58	TT	16.42						
Unsuccessful Students (N=81)	54	66.67	15	18.52	IO	12.35	N	2.47		

TABLE 4.3 (Continued)

Feelings of Students in Developmental Groups I and II About the Developmental Program

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Responses of Students in Developmental Groups I and II to "Financial Situation" Questions

	Ques	tion 1	(Degr	tee of S	elf-S	upport)	gue	stion 2	(Wor	k hours	per	week)
Group	Comp	letely	Part	ially	4	lone	Ч	<b>-</b> 10	11	<b>-</b> 20	21	<b>-</b> 30
	No.	R	No.	R	No.	R	No.	76	No.	R	No.	28
Developmental Group I (N=72)	15	20.83	31	43.06	26	36.11	14	19.44	17	23.61	15	20.83
Successful Students (N=19)			9	31.58	13	68.42	9	31.58				
Unsuccessful Students (N=53)	15	28.15	55	46.30	13	24.44	ω	15.00	17	32.07	15	28.15
Developmental Group II (N=76)	7	9.21	26	34.21	43	56.58	14	18.42	12	15.79	7	9.21
Successful Students (N=48)	m	6.25	ω	16.67	37	75.00	9	12.50	N	4.17	Μ	6.25
Unsuccessful Students (N=28)	4	14.29	18	64.29	9	21.43	œ	28.57	10	35•71	4	14.29
Total (N=148)	22	14.86	57	38.51	69	46.62	28	18.92	29	19.59	22	14 <b>.</b> 86
Successful Students (N=67)	ſ	4.48	14	10.90	50	74.63	12	17.91	CJ	2.99	С	4.48
Unsuccessful Students (N=81)	19	23.46	43	53.09	19	23.46	16	19.75	27	33•33	19	23.46

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4.5
TABLE

Responses of Students in Developmental Groups I and II to "Social Situation"Questions

Group	Quest	ion l	(Marri	ed)	Quest	ion 2 (I	ive a	t home)
	Yes	_	N	0	X	es		No
	.No	K	No.	R	No.	R	No.	R
Developmental Group I (N=72)			72	100	54	75.00	18	25.00
Successful Students (N=19)			19	100	19	100.00		
Unsuccessful Students (N=53)			53	100	35	64.82	18	33.94
Developmental Group II (N=76)			76	100	60	78.95	16	21.05
Successful Students (N=48)			48	100	40	83.33	8	16.67
Unsuccessful Students (N=28)			28	100	20	71.43	ω	28.57
Total (N=148)			148	100	114	77.03	34	22.97
Successful Students (N=67)			67	100	59	88.06	ω	11.94
Unsuccessful Students (N=81)			81	100	55	67.90	26	32.10
					-			

Group			Quest	ion 3 (	Live 1	with)		
	ЦоЦ	loth Lrents	Fat Or	cher 11y	-oM M	ther nly	One o Step	or Both Parents
	No.	R	No.	K	No.	P6	No.	Þć
Developmental Group I (N=72)	59	81 <b>.</b> 94			ω	11.11	Ŋ	6.94
Successful Students (N=19)	19	100.00						
Unsuccessful Students (N=53)	40	74.07			ω	15.00	Ŋ	9.26
Developmental Group II (N=76)	55	72.37	Ч	1.32	13	17.11	7	9.21
Successful Students (N=48)	38	71.67			9	12.50	4	8.33
Unsuccessful Students (N=28)	17	60.71	Ч	3.57	7	25.00	с	17.01
Total (N=148)	114	77•03	Ч	•68	21	14.19	12	8.11
Successful Students (N=67)	57	85.07			9	8.96	4	5.97
Unsuccessful Students (N=81)	57	70.37	Ч	1 <b>.</b> 23	15	18.52	8	9.88

Responses of Students in Developmental Groups I and II to "Social Situation" Questions

TABLE 4.5 (Continued)

TABLE 4.5 (Continued)

Responses of Students in Developmental Groups I and II to "Social Situation"Questions

Group		(Colleg	Ques e gra	tion 4 duate p	arent	s)	(Sit	Quest Quest olings w train	ion 1 ith o ing)	ollege
	0 . No.	% %	Bo No.	th %	Nei No.	ther %	No.	les 1	No.	No %
Developmental Group I (N=72)	20	27.78	9	8.35	46	63.89	30	4J.67	42	58.33
Successful Students (N=19)	9	31.58	N	10.53	ЪЪ	57.89	10	52.63	σ	47.37
Unsuccessful Students (N=53)	14	26.30	4	7.41	35	64.82	20	37.59	33	61.13
Developmental Group II (N=76)	32	42 <b>.</b> 11	7	9.21	37	48.68	35	46.05	41	53.95
Successful Students (N=48)	22	45.83	Ŋ	10.42	21	43.75	22	45.83	26	54.17
Unsuccessful Students (N=28)	ΟŢ	35.71	2	7.14	16	57.14	13	56.43	15	53.57
Total (N=148)	52	35.14	13	8.78	83	56.08	65	43.92	83	56.08
Successful Students (N=67)	28	41 <b>.</b> 79	7	10.45	32	47.27	32	47.27	35	52.23
Unsuccessful Students (N=81)	54	29.65	9	74.07	41	50.62	33	40•74	48	59.26

TABLE 4.5 (Continued)

Responses of Students in Developmental Groups I and II to "Social Situation" Questions

Group	(Pa	Quest rental on cc	ion ( insis ilege	5 stence e)		(Amount	of f	luestion amily e	7 ncour	agement		
	Y. No.	es %	No	NO K	Grea No.	t Deal %	No.	some %	Li No•	ttle	No.	lone %
Developmental Group I (N=72)	13	18.06	59	81.94	26	36.11	21	29.17	20	27.78	Ŋ	6.94
Successful Students (N=19)	m	15.79	16	84 <b>.</b> 21	JO	52.63	ω	42 <b>.</b> 11	Ч	5.26		
Unsuccessful Students (N=53)	10	18.70	43	79.63	16	30.19	13	24.44	19	35.74	Ŋ	9.26
Developmental Group II (N=76)	12	15.79	64	84.21	12	27.63	31	40.79	17	22.37	7	9.21
Successful Students (N=48)	7	14.58	41	85.42	19	39.58	21	43.75	7	14.58	Ч	2.08
Unsuccessful Students (N=28)	Ŋ	17.86	23	82.14	N	7.14	10	35.71	10	35.71	9	21.43
Total(N=148)	25	16.89	123	83.11	47	31.69	52	35.14	37	25.00	12	8.11
Successful Students (N=67)	JO	10.90	57	85.07	29	43.28	29	43.28	ω	46•II	Ч	1.49
Unsuccessful Students (N=81)	15	18.52	99	81.48	18	22.47	23	28.40	29	35.80	ТТ	13.58

Group		Question 8 (F	Jace to	study)
	Su No.	ita <b>b</b> le %	Unsı No.	iitable $\%$
Developmental Group I (N=72)	50	69.44	22	30.56
Successful Students (N=19)	15	78.95	4	21.05
Unsuccessful Students (N=53)	35	64.82	18	33.94
∏evre]onmenta] (roun II (N=76)	С С	76 68	00	of 30
			) r ] r	
Successiul Students (N=40)	37	Q <b>N•</b> J.J.	77	
Unsuccessful Students (N=28)	19	67.86	9	32.14
Total (N=148)	106	71.62	42	28.38
Successful Students (N=67)	52	35.14	15	22.39
Unsuccessful Students (N=81)	54	66.67	27	33•33

Responses of Students in Developmental Groups I and II to "Social Situation" Questions

TABLE 4.5 (Continued)

								1.
Group	)	Quest: Subject	ion l to d	raft)	Questi (Physical	on 2 Hand	icaps)	
	No.	es	No.	NO K	Yes No.	No	NO K	1
Developmental Group I (N=72)	N	2.78	70	97.22		72	100	
Successful Students (N=19)	0	10.53	17	89.47		19	100	
Unsuccessful Students (N=53)			53	100.00		53	100	
Developmental Group II (N=76)	Ŋ	6.58	ΓŢ	93.42		76	100	
Successful Students (N=48)	4	8.22	777	91.67		48	100	
Unsuccessful Students (N=28)	Ч	3.57	27	96.43		28	100	
Total (N=148)	7	4.73	141	95.27		148	100	
Successful Students (N=67)	9	8.96	61	91.04		67	100	
Unsuccessful Students (N=81)	Ч	1•23	80	98.77		81	100	
					_			

TABLE 4.6

Responses of Students in Developmental Groups I and II to "Emotional Situation" Questions

Continued)
, 0.4
TABLE

Responses of Students in Developmental Groups I and II to "Emotional Situation"Questions

Group	.)	Questi Vocations	ton 3 al goe	([]	5)	Quest Social C	ion 4 ontac	ts)		
	No	Kes %	No.	No %	No.	es K	No.	No K		
Developmental Group I (N=72)	51	70.83	21	29.17	54	33•33	48	66.67		
Successful Students (N=19)	19	100.00			4	21.05	15	78.95		
Unsuccessful Students (N=53)	35	59.26	21	39.44	20	37.59	33	61.13		
Developmental Group II (N=76)	60	78.95	<b>1</b> 6	21.05	52	32.89	51	67.11		
Successful Students (N=48)	40	83.33	ω	16.67	10	20.83	38	71.67		
Unsuccessful Students (N=28)	20	71.43	ω	28.57	15	53.57	13	46.43		
Total (N=148)	TTT	75.00	37	25.00	49	32.70	66	66.89		
Successful Students (N=67)	59	88.06	ω	11 <b>.</b> 94	14	10.90	53	79.10		
Unsuccessful Students (N=81)	52	64.07	29	35.80	35	43.21	46	56.79		
Question 6 (Non-existence of problem con- tributing most to success)	Personal No. %	9.72	2.11	4.82	9.21	6.67	6.43	946	9.70	9.26
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		Ś	4	9	Ъ	9	4	Ъ.	Ś	Ŀ
		43	8	35	45	32	13	88	40	48
	Family No.	23.61	26.32	22.63	23.68	20.83	28.57	23.65	22.39	24.69
		17	Ŋ	12	18	10	ω	35	15	20
	Financial No. %	16.67	31.58	11.32	17.11	12.50	25.00	16.89	17.91	16.05
		12	9	9	13	9	2	55	12	13
Question 5 (Existence of problems contribu- ting to failure in Developmental Program)	sonal %	63.02	<u></u>	63.02	64•29		64.29	35.14		64.07
	Per No.	34		34	18		18	52		52
	Family No. %	16.58		16.58	21 <b>.</b> 43		21.43	10.14		18.52
		σ		σ	9		9	15		15
	Financial No. %	18.70		18.70	14 <b>.</b> 29		14.29	946		17.28
		10		10	4		4	14		14
Group		Developmental Group I (N=72)	Successful Students (N=19)	Unsuccessful Students (N=53)	Developmental Group II (N=76)	Successful Students (N=48)	Unsuccessful Students (N=28)	Total (N=148)	Successful Students (N=67)	Unsuccessful Students (N=81)

TABLE 4.6 (Continued)

Responses of Students in Developmental Groups I and II to "Emotional Situation" Questions

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12.50 10.53 19.74 25.00 10.71 16.22 10.90 12.35 13.21 Never No. 12 12 σ  $\mathfrak{m}$ 24 14 5 2  $\sim$ 18.42 19.44 22.63 14.29 18.92 19.75 17.91 10.53 20.83 quently (Counseling Contacts) Fre- $\infty$ No. question12 10 28 28 12 14 14 16 16 S 4 34.72 52.63 28.15 35.53 35.14 37.04 32.84 53.57 25.00 sionally Occas-No. 10 15 12 L D 52 30 52 27 22 19.44 26.32 16.85 25.00 17.86 22.30 28.36 17.28 29.17 R Once No. 14 19 33 14 σ ഹ 19 14 5 52.78 73.68 55.26 45.83 54.05 53.73 54.32 7th • 4th 71.43 R personal problems) No Question 7 (Major or minor difficulty with No. 42 22 80 38 54 20 14 36 44 26.32 53.76 774 **•** 477 45.95 54.17 28.57 46.27 45.68 47.22 K Yes No. 63 34 26 68 34 ഹ ω 31 37 Unsuccessful Students (N=53) Unsuccessful Students (N=81) Unsuccessful Students (N=28) Developmental Group II (N=76) Successful Students (N=48) Developmen**t**al Group I (N=72) Successful Students (N=19) Successful Students (N= $\mathbb{C}/$ ) Group Total (N=148

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TABLE 4.6 (Continued)

to "Emotional Situation"Questions Н Н and н Students in Developmental Groups Responses of

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The responses tabulated in TABLE 4.3 indicate that a greater proportion of students in Developmental Group II had positive feelings toward the Developmental Program at the time of their admission to college than did students in Developmental Group I. However, at the completion of the program a relatively similar proportion of students in both groups had positive feelings toward the program. A greater proportion of successful students in both groups had positive feelings before starting and after completing the program than unsuccessful students in both groups.

The responses tabulated in TABLE 4.4 indicate a greater proportion of students in Developmental Group I were self-supporting and worked more hours a week than did students in Developmental Group II. A large percentage of these working students in Group I were designated as "unsuccessful."

The responses tabulated in TABLE 4.5 indicate that Developmental Group II students came from more stable home backgrounds, more familial educational backgrounds, and from homes with more adequate facilities than did Developmental Group I students. Responses also indicate that more "unsuccessful" students in both groups lived away from home, came from broken homes, had parents and siblings with less education than did "successful" students in both groups. The responses tabulated in TABLE 4.6 indicate that more "unsuccessful" students in both Developmental groups had difficult personal problems and less counseling contacts than did "successful" students in both Developmental Groups. Developmental Group II students had more counseling contacts than did Developmental Group I students. The majority of students in both Developmental groups thought that personal problems had a greater effect on academic success than did financial or social problems. "Unsuccessful" students in both groups had the largest proportion of problems in all three areas.

Developmental students' responses to the structured questions presented to them in individual interviews supported the general corollary that the students themselves thought that factors other than mental ability did have an effect on their academic success. In general, responses indicated that differences did exist between the feelings of students in Developmental Group I and Developmental Group II. However, responses indicated that similarities did exist among the "successful" students in both Developmental groups and among the "unsuccessful" students in both Developmental groups.

## Summary

In this chapter the data from the follow-up study of the Control Group, Developmental Group I, and

Developmental Group II were presented and analyzed relative to the major hypothesis, sub-hypothesis (a), and subhypothesis (b). Developmental student responses to the structured questions asked during the individual interviews were presented and analyzed.

A one-way analysis of variance for unequal subclasses was the statistical technique applied to the major hypothesis. The college cumulative grade point average for each student was recorded for the period up to and including the final semester each student was in attendance at Grand Rapids Junior College. The analysis of variance resulted in an F statistic of 3.30802 which was found significant at the .05 level indicating that the cumulative grade point averages achieved by students in Developmental Group I and Developmental Group II during their enrollment in Grand Rapids Junior College did significantly exceed the cumulative grade point averages achieved by students in the Control Group during their enrollment in Grand Rapids Junior College.

Data obtained from the same follow-up study were used to determine the total number and corresponding percentage of all students in both Developmental groups who successfully completed the Developmental semester with a final grade point average of 2.0 on a 4 point scale. Analysis of this data was made by comparing the proportion of successful students in each group. The retention of students at the end of the Developmental semester was over 30% greater for Developmental Group II than for Developmental Group I.

Data obtained from the same follow-up study were used to determine the total number and corresponding percentage of Developmental students who successfully completed each successive semester which was included in the follow-up study. Analysis of this data was made by comparing the proportion of successful students in both groups for each semester of the study. Retention of students from Developmental Group II was over 30% greater than the retention of students from Developmental Group I for each of the four semesters.

Responses of Developmental students to structured questions presented during individual interviews at the termination of the Developmental semester were the data used to determine which of the designated factors these students felt had an effect on their academic success. The structured questions were organized under the following four major headings: Feelings Relative to the Developmental Program, Financial Situation, Social Situation, and Emotional Situation. Analysis of the data was made by comparing the responses of all successful and unsuccessful students in the Developmental Program. A comparison was

also made of the responses given by students in Developmental Group I with those in Developmental Group II. The responses indicated that the majority of students in both Developmental groups had positive feelings relative to the Developmental Program when they entered college and when they finished the Program; the majority of negative feelings were expressed by "unsuccessful" students in both groups. A greater percentage of Developmental Group I students in "unsuccessful" sub-groups indicated the presence of financial, social, and personal problems in comparison with Developmental Group I students in the "successful" sub-groups. A large majority of students in both Developmental groups felt that personal problems rather than financial or social problems had the greatest effect on their academic achievement. "Unsuccessful" students who seemed to have more financial, social, and personal problems than "successful" also made fewer counseling contacts than "successful" students.

In Chapter V conclusions drawn from the data will be presented accompanied by discussion and implications for future research.

#### CHAPTER V

# SUMMARY AND CONCLUSIONS

This final chapter is comprised of the following four parts: summary, discussion of the findings, conclusions, and implications for future research. In the first part, the summary, the following are included: a discussion of the problem, the design and methodology of the study including the major hypothesis, subhypotheses, and corollary which were tested. In the second part of the study the major findings are listed along with a discussion of each. The discussion integrates the findings from this study with the findings of other research studies and articles from the literature which were focused on the same problem area. Conclusions are drawn in the third part of the study, and in the last part, implications for future research in this area are pointed out.

## Summary

Throughout the nation educators in general, and particularly educators concerned with community junior colleges, are deeply concerned about the growing number of low-achieving high school graduates who are seeking admission to institutions of higher learning. Junior colleges with "open-door" admission policies face the • • . . • 

growing problem of designing and implementing courses and curriculums which will meet the needs of students whose high school records give evidence of low achievement.

Four year colleges and universities are becoming more and more restrictive relative to admission of students with marginal high school academic records. As a result, more and more of these students are seeking enrollment in community junior colleges. The philosophy of junior colleges is rooted in the belief that all high school graduates who seek further education should be given this opportunity. It is felt that society cannot afford to waste any human resource.

Many junior colleges are attempting to reduce the amount of wasted human talent by offering special courses and programs to low-achieving high school graduates in an effort to provide them with an opportunity to gain the academic background necessary for college-level work. As an example, the one-semester Developmental Program at Grand Rapids Junior College was designed to help high school low-achievers acquire those skills and attitudes necessary for satisfactory achievement in junior college. In this study an attempt was made to analyze the effectiveness of the Developmental Program at Grand Rapids Junior College when used in conjunction with an "opendoor" admissions policy.

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Three groups of students were selected for the study. All students in the three groups were low-achieving high school graduates with a high school academic grade point average of 1.5 or lower on a 4 point scale. One group, the Control Group, was comprised of all the students with the achievement record above who entered Grand Rapids Junior College at the beginning of the fall semester of 1957. The other two groups, Developmental Groups I and II, were comprised of all the students with grade point averages of 1.5 or lower who entered Grand Rapids Junior College at the beginning of the fall semester of 1960 and at the beginning of the spring semester of 1961, respectively.

Homogeniety in respect to scholastic aptitude and mathematical, English and reading skills was established for Developmental Groups I and II. Five standardized tests measuring these characteristics were administered to all students in both groups. T-tests were calculated on the resulting scores from these tests. The results of the T-tests on the five variables did establish that no significant difference existed between the two groups at the .05 level of confidence.

Students in the Control Group were admitted without restiction relative to course and curriculum selection. Continued attendance at Grand Rapids Junior College

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depended upon the student's ability to maintain a 2.0 grade point average. Those students who had not earned the necessary grade point average by the end of each semester were placed on academic probation pending dismissal. Developmental Groups I and II were admitted on a onesemester trial basis to a Developmental Program in which course selection was limited to remedial subjects. The number of credit hours was also limited. The criterion for successful academic performance was the achievement of a 2.0 grade point average at the end of the Developmental semester. The students in both groups designated as "successful" were allowed to continue in the curriculum of their choice. Their continued attendance at Grand Rapids Junior College depended upon the all-college regulations of academic selective retention.<sup>1</sup> One difference existed between Developmental Group I and Developmental Group II: admission was delayed one semester for Developmental Group II in order to determine if this single factor would have any effect on the academic performance of students in the group.

In order to determine the value of the Developmental Program at Grand Rapids Junior College the following major hypothesis and two sub-hypotheses were tested:

<sup>&</sup>lt;sup>1</sup>The All-college regulations of academic selective retention were stated on pages 12-13.

- 1. The cumulative grade point averages achieved by students in Developmental Group I and Developmental Group II during their enrollment in Grand Rapids Junior College will significantly exceed the cumulative grade point averages achieved by students in the Control Group during their enrollment in Grand Rapids Junior College.
  - (a) The proportion of students in Developmental Group II who successfully complete the Developmental Program will exceed the proportion of students in Developmental Group I who successfully complete the Developmental Program.
  - (b) The proportion of students in Developmental Group II who achieve a satisfactory grade point average while enrolled at Grand Rapids Junior College for each semester included in the study will exceed the proportion of students in Developmental Group I who achieved a satisfactory grade point average while enrolled at Grand Rapids Junior College for each semester included in the study.

In order to test the major hypothesis, a study of college cumulative grade point averages was conducted of all subjects during the successive semesters they were in attendance at Grand Rapids Junior College for a maximum period of four successive semesters for the Control Group and five successive semesters for Developmental Groups I and II. This was the minimum amount of time necessary for a student to complete any curriculum. A one-way analysis of variance for unequal sub-classes was the statistical technique used to determine if a significant difference in the cumulative grade point averages between the Control Group and Developmental Groups I and II did occur. In order to test sub-hypothesis (a), a follow-up study was conducted of each student in Developmental Group I and Developmental Group II. The grade point average of each student at the end of the Developmental semester was used to identify the students in both groups who successfully completed the Developmental Program. Analysis of this data was made by comparing the proportion of successful students in each of the two groups.

In order to test the sub-hypothesis (b) the number of students from each Developmental group who successfully completed each academic semester while in attendance at Grand Rapids Junior College was recorded as a part of the above follow-up study. Analysis of this data was made by comparing the proportion of students in each Developmental group who successfully completed each successive semester during the four semesters necessary to complete any of the junior college curriculums.

In order to test the corollary that students in Developmental Group I and Developmental Group II will mention in structured interviews specific factors which they feel have more effect on their academic success than other factors, individual structured interviews were held with each student in Developmental Groups I and II at the end of the Developmental semester. Responses made by

students in both groups to the selected questions asked during the interviews were recorded. Analysis of this data was made by comparing the responses of students in Developmental Group I with the responses of students in Developmental Group II in an attempt to determine if any non-intellectual factors were felt by students to have a significant effect on their academic performance. A comparison was also made between the responses of the "successful" and "unsuccessful" students in each group.

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## Findings and Discussion

The findings relative to the major hypothesis and sub-hypotheses (a) and (b) presented earlier are as follows:

- 1. Students in Developmental Group I and Developmental Group II achieved significantly higher cumulative grade point averages during their enrollment in Grand Rapids Junior College than students in the Control Group.
- 2. The proportion of students in Developmental Group II who successfully completed the Developmental Program in Grand Rapids Junior College exceeded the proportion of students in Developmental Group I who successfully completed the program.
- 3. The proportion of students in Developmental Group II who achieved a satisfactory grade point average for each successive semester included in the study exceeded the proportion of students in Developmental Group I who achieved a satisfactory grade point average for each successive semester.

Throughout the literature related to this study, writers and researchers emphasize that with the increasing numbers of low-achieving high school graduates seeking admission to institutions of higher learning, the community colleges face a growing responsibility to help prepare them for higher education. The study of the dynamics of the able "low-achiever" has already received a great deal of attention from educators who feel that a better understanding of these individuals will lead to new methods and techniques, educational and psychological, which can be employed to help such students realize their potential.

Many educators have recommended that special courses and curriculums designed to meet the needs of low-achieving high school graduates be offered by community junior colleges. However, only a small percentage of junior colleges have reported offering such courses and only a few have published studies of the effectiveness of remedial programs for students at that level.

This study was designed to evaluate the effectiveness of an experimental program for low-achieving high school graduates which is being offered at Grand Rapids Junior College and is designated **as** the Developmental Program. The results of this study support the contention that a remedial curriculum in the junior college can benefit able "low-achievers" to realize their academic potential.

In comparing the Developmental Program at Grand Rapids Junior College with the three experimental programs,

On Trial Program, Operation Second Chance, and Program O, which were reviewed in Chapter II, the rationale for the development of all programs was similar: the desire to meet the needs of students who would ordinarily not be considered admissable by a four-year college or university.

The On Trial Program differed basically from the Grand Rapids Junior College Developmental Program in that only borderline inadmissable students were allowed to participate, and only college level courses were offered. However, the results of the On Trial Program indicated that some of the participants successfully completed the program and continued to perform adequately at the college level. Therefore, the results of both experimental programs indicate that specialized remedial programs do help some of the participants to realize their academic potential.

In comparing Operation Second Chance with the Developmental Program at Grand Rapids Junior College, the two programs are similar in two important respects: (1) both programs consist of remedial courses in skill areas and (2) special guidance services are made available to all students.

A basic difference between the two programs is found in the admission policy. Operation Second Chance is offered to only a small number of students who have

been refused admission to other colleges and universities. This restricted admission does not make possible a valid comparison of the results of the two programs. The evaluation made of Operation Second Chance by the staff was subjective, but it showed that there was evidence of emerging academic potential when students were given an opportunity to overcome earlier deprivations. Special guidance was felt to be a worthwhile and integral part of the program.

In comparing Program 0 with the Developmental Program at Grand Rapids Junior College, the following similarities were found to exist: (1) admission was granted to all students who qualified within specified academic criteria, (2) all courses were remedial, (3) special orientation classes were scheduled, (4) special guidance services were offered to all students, and (5) the length of the program was one semester with probationary student status. The major difference was found in the regulations relative to student retention.

A three-year follow-up study of Program O revealed that 4% of the students from the program qualified for junior college graduation and 12% were eligible to continue study at the college. Thus Program O was successful in helping a small percentage of students obtain education at the college level. Academic failure,

as a single factor, accounted for the greatest percentage of "drop-outs" from the program. No study was attempted to discover if this academic failure was caused by low ability or other crippling factors.

Of the three programs discussed above, Program O was more nearly like the Grand Rapids Junior College Developmental Program. However, all four programs were developed on the premise that giving "low-achievers" an opportunity to prove themselves academically is a worthwhile effort at the junior college level. Most college staff members who worked with students in the four programs felt that factors other than lack of mental ability were contributing to the low-achievement of many students and that special guidance of some type is a necessary part of this kind of program.

A study of all four programs reveals that some of the participating students were enabled to do successful college level work and did successfully complete one or more years of college education. Without specialized programs these students presumably would not have been able to do so. Thus, from the evidence now available it is reasonable to assume that special assistance programs in junior colleges are worthwhile. The Developmental Program at Grand Rapids Junior College has evidenced promise in meeting the needs of "low-achievers", emotional and social as well as academic needs. The findings relative to the corollary presented

earlier were as follows:

Students in Developmental Group I and Developmental Group II did mention in structured interviews factors which they thought had an effect upon their academic success.

- Responses indicate that a greater proportion of students in Developmental Group II had positive feelings toward the program at the time of their admission to college than students in Developmental Group I. More "unsuccessful" students had negative feelings than did "successful" students in both groups.
- 2. Responses indicate that at the termination of the Program the majority of students in both Developmental groups had positive feelings about the Program. The majority of negative feelings were expressed by "unsuccessful" students.
- 3. Responses indicate that Developmental Group I had a higher proportion of students who were self-supporting and worked more hours per week than Developmental Group II. A large percentage of these working students in Group I were designated as "unsuccessful."
- 4. Responses indicate that Developmental Group II students came from more stable home backgrounds, better familial educational backgrounds, and from homes with more adequate facilities than did Developmental Group I students.
- 5. Responses indicate that more "unsuccessful" students in both groups lived away from home, lived with only one parent or a parent and step-parent, had parents and siblings with less education, had less family encouragements, and had less adequate home facilities than did "successful" students in both groups.
- 6. Responses indicate that a greater proportion of "unsuccessful" students in both Developmental groups had difficult personal problems and less counseling contacts than did "successful" students in both Developmental groups.

Developmental Group II students had more counseling contacts than did Developmental Group I students.

- 7. Responses indicate that more students in Developmental Group II had based a college decision on a vocational goal rather than a special goal than had students in Developmental Group I.
- 8. Responses indicate that the majority of students in both Developmental groups thought that personal problems rather than financial or social problems had the greatest effect on their academic success. "Unsuccessful" students in both groups had the largest proportion of problems in all three areas.

The results of testing the above corollary make it apparent that many low-achieving Developmental students thought they were unable to perform successfully at the junior college level because they were also coping with economic, social, or emotional problems. These results supported previous contentions of educators that such factors may be the major cause of low-achievement for some students.

Responses to the interview questions revealed that the majority of "unsuccessful" students in both Developmental groups were attempting to cope with problems in one or more of the areas mentioned above. A large percentage of these students no longer lived at home and were partially or completely self-supporting. Lack of stable home backgrounds and educational encouragement was evidenced by many of the unsuccessful students, and though they indicated they were beset by many difficult personal problems, they made few, if any,attempts to secure counseling.

The Grand Rapids Junior College Developmental Program had included a course labeled Psychology A which was an attempt to help Developmental students adjust academically, socially, and emotionally to the college environment. Individual counseling was available to all of these students. No attempt was made to evaluate the effectiveness of either the psychology course or the counseling.

# Conclusions and Discussion

From the data and subsequent findings of this study, the following conclusions regarding the effectiveness of the Grand Rapids Junior College Developmental Program and the relationship of certain social, emotional, and economic factors to the academic success of low-achieving junior college students were drawn.

# <u>The Developmental Program at Grand Rapids Junior</u> <u>College is successfully meeting the specific</u> objective for which it was established.

The Grand Rapids Junior College Developmental Program was established with the specific objective of helping lowachieving high school graduates maintain a satisfactory grade point average while attending college. TABLE 4.1 shows that both Developmental Group I and Developmental Group II had higher grade point averages for each successive semester at Grand Rapids Junior College than did the Control Group. The grade point averages of the Control Group and Developmental Group I were lower at the end of the fourth college semester in comparison with the third college semester. There is no objective evidence to account for these lower grades, but it might be assumed that the more capable students dropped out of school earlier in order to enroll in a four-year college or university.

TABLE 4.2 shows that Developmental Group I had a smaller percentage of "successful" students at the completion of the fourth college semester than did Developmental Group II. These were probably two quite different groups relative to non-intellectual factors because Developmental Group II students were delayed onesemester after high school graduation before they were admitted. This factor alone could account for the difference in the higher percentage of "successful" students in Developmental Group II when compared with Developmental Group I.

> 2. The Developmental Program at Grand Rapids Junior College encourages a higher percentage of lowachieving students to drop out of school early in their program.

TABLE 4.1 shows that 64.25% of the students in the Control Group enrolled for the second semester they were at Grand Rapids Junior College while only 26.39% of the students in Developmental Group I reenrolled. This data indicates that the Developmental Program actually encouraged low-achieving students to drop out of college at the end of their first semester rather than attempting to struggle through one or more succeeding semesters.

TABLE 4.1 also shows that 63.16% of the students in Developmental Group II enrolled for the second semester they were at Grand Rapids Junior College as compared to the 64.25% of the students of the Control Group who reenrolled. It would be expected that these percentages would be comparable because the delayed admission of students in Developmental Group II must have caused the less competent to fail to even enroll in the Developmental Program.

> 3. <u>A one-semester delay before admission to the</u> <u>Developmental Program at Grand Rapids Junior</u> <u>College increases the proportion of students</u> <u>who successfully complete the Developmental</u> <u>Program and each succeeding semester in the</u> <u>regular program</u>.

TABLES 4.1 and 4.2 indicate that more students in Developmental Group II successfully completed the the Developmental Program than did students in Developmental Group I. Also the grade point averages attained by Developmental Group II students were higher than those of Developmental Group I students over a five semester period. The one-semester delay before admission for Developmental Group II students was the only major difference found between the two groups. Thus it is reasonable to assume that the one semester delay before admission caused those with little interest or low motivation to fail to enroll. If this is so, the delay itself acted as a screening device and probably accounts for the difference in drop-out rates and grade point averages.

> 4. Individual counseling interviews during the first few weeks of the Developmental semester should be included as an integral part of the program.

Responses to questions in the structured interviews held with Developmental students at the end of the Developmental semester indicated they thought nonintellectual factors did significantly impede academic success. For those Developmental students who have financial, social, or emotional problems, their early identification plus subsequent counseling and other forms of assistance might well have enabled them to control these

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conditions which interfer with their ability to maintain a satisfactory grade point average.

5. Low-achieving junior college students feel that economic, social, and emotional factors all have a significant effect on their academic success.

## A. Economic Factors

Responses tabulated in TABLE 4.4 indicate that economic problems contributed to the lack of academic success. A greater percentage of students in Developmental Group I expressed the necessity to work than did students in Developmental Group II and a large percentage of these working students were designated as "unsuccessful". This is further supported by data in TABLE 4.6 related to the existence or non-existence of financial problems.

Responses tabulated in TABLE 4.6, question number 5, indicated that some "unsuccessful" students in both Developmental groups had financial problems which they thought contributed to their failure in the Developmental Program. These financial problems were related to the necessity to work.

B. Social Factors

Responses tabulated in TABLE 4.5 indicate that social problems including the home environment and familial

educational background were thought by the students to contribute to their lack of academic success. Developmental Group II students came from more stable home backgrounds, from families with more education, and from homes with more adequate facilities than did Developmental Group I students. More "unsuccessful" students in both groups lived away from home, came from broken homes, and had parents and siblings with less education than did "successful" students in both groups. "Unsuccessful" students in both groups indicated parental insistence on college and at the same time less parental encouragement than did "successful" students.

# C. Emotional Factors

Responses tabulated in TABLE 4.6 show that students in the Developmental Program felt that emotional problems were also related to academic success in junior college. A greater percentage of students in Developmental Group II were subject to the draft than students in Developmental Group I. A greater percentage of "successful" students in both groups were subject to the draft than "unsuccessful" students in both groups. It could be assumed that fear of being drafted provided a positive motivation for academic success. A greater percentage of Developmental Group II students the college with vocational rather than social goals than Developmental Group I students. A greater percentage of "successful" students in both groups entered college with vocational rather than social goals than "unsuccessful" students from both groups.

Responses also indicate that more "unsuccessful" students in both Developmental groups had difficult personal problems and less counseling contacts than did "successful" students in both groups. It may be that those students who are academically successful have a greater awareness of their problems and are more willing to seek help than "unsuccessful" students. The majority of students in both Developmental Group I and Developmental Group II felt that personal problems have a greater effect on academic success than do financial and social problems. "Unsuccessful" students in both groups had the largest proportion of problems in all three areas.

> 6. Most students in the Developmental Program will hold positive feelings about the program at the end of the Developmental semester.

Data in TABLE 4.3 indicates that a greater proportion of Developmental Group II students had positive feelings toward the Developmental Program at the time of their admission than did students in Developmental Group I. However, a similar proportion of students in both groups had positive feelings toward the program at the time of

its completion. A greater proportion of "successful" students in both groups had positive feelings before starting the program and after completing the program than "unsuccessful" students in both groups. It might be assumed from this data that the Developmental Program will be felt by most students to be worthwhile, particularly at the time of its completion. This is particularly true of "successful" students but will include some "unsuccessful" students who also express positive feelings in spite of the fact that they are unable to maintain a satisfactory grade point average.

## Implications for Future Research

The data and subsequent findings of this study suggest that the following areas are worthy of further study.

- 1. During the structured interviews Developmental students revealed that they felt some factors more than others had an effect on their academic success. Further research could be carried on relative to these disabling factors in an attempt to determine the extent to which each factor does influence academic achievement.
- 2. Further study should be done relative to techniques which would aid in the early discovery of problems which are impeding the academic success of able "low-achievers."
- 3. The data in the present study indicates that students in Developmental Group II were academically more successful than students in

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Developmental Group I. Admission had been delayed one semester for Developmental Group II students. It is assumed that this one differentiating factor has an effect upon students' achievement. Further study should be made of why and how this factor contributes to academic success.

- 4. Other studies have emphasized the importance of instructors and counselors in the effectiveness of special programs for low-achieving high school graduates. Further research is needed in this area.
- 5. Research should be done to determine the most effective standardized testing instruments which could be used for the purpose of early identification of non-intellectual problems which low-achieving students might have and for the purpose of checking the academic progress of these students.
- 6. A follow-up study of students in the three groups studied who either dropped out or were dismissed from college was not made. Further research should be designed to study those students who were unsuccessful in the Developmental Program to determine if the Program had any positive effect on their future personal and vocational choices.

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## APPENDIX A

FINAL GRADE POINT AVERAGE OF EACH STUDENT IN THE CONTROL GROUP FOR EACH SUCCESSIVE SEMESTER OF ATTENDANCE AT GRAND RAPIDS JUNIOR COLLEGE APPENDIX A

Final Grade Point Average of Each Student in the Control Group For Each Successive Semester of Attendance at Grand Rapids Junior College

Cumulative Grade Point Average	нччччч чч ч окно чокоч Фнососово чоко чкой чкой чкой чкой токон чкой токон чкой токон чкой токон токон токон токон токон токон токон токон токон токон токон токон токон токо токо
Fourth College Semester	1.92 1.50 1.25 2.41 2.33
Third College Semester	1.18 2.31 2.32 1.75 1.75 1.75 2.35 2.35 2.35 2.35
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PENDIX

Final Grade Point Average of Each Student in the Control Group for Each Successive Semester of Attendance at Grand Rapids Junior College

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APPENDIX A (Continued)

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## APPENDIX B

FINAL GRADE POINT AVERAGE OF EACH STUDENT IN DEVELOPMENTAL GROUP I FOR EACH SUCCESSIVE SEMESTER OF ATTENDANCE AT GRAND RAPIDS JUNIOR COLLEGE

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n Developmental Group I fo rand Rapids Junior College	Fourth College Semester	1.63		
	Third College Semester	1•72	2.00	1.75
l Student in Idance at Gra	Second College Semester	1.37	0.00 2.21	1.00
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APPENDIX B (Continued)

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APPENDIX B (Continued)

## APPENDIX C

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FINAL GRADE POINT AVERAGE OF EACH STUDENT IN DEVELOPMENTAL GROUP II FOR EACH SUCCESSIVE SEMESTER OF ATTENDANCE AT GRAND RAPIDS JUNIOR COLLEGE

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APPENDIX C (Continued)

Final Grade Point Average of Each Student in Developmental Group II for Each Successive

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Third College Semester	1 <b>.</b> 54	3.78	3.07	3.40	1 <b>.</b> 76
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Student	000000 M5447	1001 1001	+++いいい -ののしい	$n \ \omega + \omega \alpha$	270

APPENDIX C (Continued)

Cumulative Grade Point Average		1 	1001 1001 1001	1.08 91.08 08 108
Fourth College Semester	0 9 0 0	500 500 500 500 500 500 500 500 500 500		
Third College Semester	1.50	000 00 00 00 00 00 00 00 00 00 00 00 00	0.00	0000
Second College Semester	2.08 1.07 07	000 000 000 000	1.54	1•42
First College Semester	000 000 000 000 000 00 00 00 00	0000 5000 0000 0000	1.09	1•60 •53
Developmental Semester	-++000500 +++000500	1000 17 1000 1000	10 0 10 0 10 0 10 0	1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Student	00000000000000000000000000000000000000	00 - 00 0 00 0 0 0 0	) 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	27773 7743

APPENDIX C (Continued)

Final Grade Point Average of Each Student in Developmental Group II for Each Successive Semester of Attendance at Grand Rapids Junior College

