AN EVALUATIVE STUDY OF THE ACADEMIC PERFORMANCE OF STUDENTS ENROLLED IN THE EDUCATIONAL AND CULTURAL DEVELOPMENT PROGRAM AT MACOMB COUNTY COMMUNITY COLLEGE

Thesis for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
TERRANCE A. ALMQUIST
1972



This is to certify that the

thesis entitled
AN EVALUATIVE STUDY OF THE
ACADEMIC PERFORMANCE OF STUDENTS
ENROLLED IN THE EDUCATIONAL AND
CULTURAL DEVELOPMENT PROGRAM AT
MACOMB COUNTY COMMUNITY COLLEGE
presented by

Terrance A. Almquist

has been accepted towards fulfillment of the requirements for

Ph.D. degree in <u>Administra</u>tion and Higher Education

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Date January 18, 1972

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ABSTRACT

AN EVALUATIVE STUDY OF THE ACADEMIC
PERFORMANCE OF STUDENTS ENROLLED IN THE
EDUCATIONAL AND CULTURAL DEVELOPMENT PROGRAM
AT MACOMB COUNTY COMMUNITY COLLEGE

By

Terrance A. Almquist

Purpose of the Study

The purpose of this study was to evaluate the academic performance of students enrolled in the Educational and Cultural Development (ECD) Program at Macomb County Community College (MCCC). The program consisted of a comprehensive general education curriculum designed to serve the student who scored at the 60th percentile or lower on the American College Testing Program Aptitude Test Composite (ACT-C) score. Previous research at MCCC had indicated that the student who expressed a desire to take a transfer program but scored below the 60th percentile (ACT-C) was most likely to drop out without completing any specific course of study. The study is an attempt to evaluate the results of a Program designed to meet the needs of the so-called "marginal" or high-risk community college student. The basic format for the Program incorporates a core of general education courses with team teaching and block scheduling in an interdisciplinary approach to education.

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Procedures

The study focused on comparing the academic performance of students in the ECD Program to the academic performance of students in the Liberal Arts Program at MCCC.

All full-time students who entered the ECD Program in 1967 (597 students) and 1968 (513 students) and all full-time students who entered the Liberal Arts Program in 1967 (2,209 students) and 1968 (2,409 students) were sorted into twelve groups by curriculum (two levels of interest), year of entry (two levels of interest), and ACT-C score (three levels of interest). From each sub-population a sample was randomly selected.

Five major areas of interest were examined: Persistence, First-Year, First/Second Year, Two Years, and Fifth Semester. Seven measures were used to assess the relative effectiveness of the program: persistence, credits attempted, credits earned, grade point average, Success I, Success II, and graduation. A repeated measures analysis of variance was used to analyze the data and test the hypotheses.

Major Findings of the Study

The students in the ECD Program persisted at a significantly higher level during the first year of college

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than did the Liberal Arts Program students. There was no difference in persistence at the end of two years.

The students in the ECD Program reached significantly higher levels of credit hours attempted, credit hours earned, grade point average, and Success I than did the Liberal Arts students during the first year of college.

Neither the ECD nor the Liberal Arts students did as well during the second year of college as they had during the first year of college. The drop for the ECD group was greater than it was for the Liberal Arts group.

However, in spite of the greater drop in performance during the second year, the credit hours attempted, credit hours earned, and grade point average for the ECD students reached significantly higher levels than did those of the Liberal Arts group at the end of two years. The ECD students also reached the level of Success II and graduation in significantly greater proportion than did the Liberal Arts students at the end of the two year period.

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By

Terrance A. Almquist

A THESIS

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

DOCTOR OF PHILOSOPHY

Department of Administration and Higher Education

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ACKNOWLEDGMENTS

This work never could have been completed without the assistance of many fine people. Deep and sincere thanks go to Dr. James Nelson who as director of this study gave me invaluable direction throughout the several phases of the study.

Acknowledgment is made to Dr. Max Raines and Dr.

Van Johnson for their encouragement during the progress of the study. Grateful acknowledgment also goes to Dr. Andrew Porter who provided much-needed assistance with the research design and the statistical portions of the study.

Invaluable help came from Dr. John Telford in the preparation of the manuscript and Dr. Martin Hogan in the collection and processing of the data.

A special debt of gratitude is owed to my wife, Lois, without whose understanding this study could not have been completed, and to Shelley and Andy, my children who waited patiently for the completion of this study.

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CHAPTER I

THE PROBLEM

This chapter contains a general introduction to the study and includes need, purpose, theory, areas of interest, definitions, delimitations, assumptions and an overview of the dissertation.

Need

The community college is being called upon to play a major role in the democratization of higher education in the United States. Students are attending community colleges in ever increasing numbers to obtain an education. The number of community college students has increased from 600,000 in 1960 to almost 2,000,000 in 1969, accounting for nearly 30 percent of all undergraduates and 25 percent of all students

lJohn E. Roueche, <u>Salvage</u>, <u>Redirection</u>, <u>or Custody?</u>
(Washington, D. C.: American Association of Junior Colleges, 1968), p. 5.

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Open-Door sion on Hi Company, 1 in higher education in the nation.² The Carnegie Commission on Higher Education projects that 35 to 40 percent of all undergraduate students will be enrolled in community colleges by 1980.

The general philosophy of community college education in this country is that each student should be allowed to progress as far as his interests and ability allow. The trend has been to admit any and all adult individuals, whether they have graduated from high school or not, who believe that they may benefit from attendance at a community college.

However, this "open door" admission policy may be encouraging students to enter who are not prepared to handle the traditional academic curriculum that is still the main emphasis at most junior/community colleges. As a result, the open door may become a revolving door, and the prospective student will find himself back on the street without having his needs met or his desires and expectations fulfilled.

Special consideration must be given students who expect to pursue a college transfer curriculum in the community college but who come from a background of past performances in school that indicate a high probability of

²The Carnegie Commission on Higher Education, <u>The Open-Door Colleges</u>, A Report prepared by the Carnegie Commission on Higher Education (New Jersey: McGraw-Hill Book Company, 1970), p. 3.

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failure in community college work. As early as 1960,
Burton R. Clark recognized that a significant number of
community college students entered with transfer intentions
but failed to either transfer to a four-year institution or
to complete a terminal curriculum at the community college.

Most ended their college career by simply dropping out.

Clark stated that the battle of the production line in the
junior college is to hold onto a good share, if not all,
of these students long enough to train them for an occupation
or to add to their general education.³

The Carnegie Commission on Higher Education makes provision for this in its recommendation that,

All state plans for the development of two-year institutions of higher education should provide for comprehensive community colleges, which will offer meaningful options for college-age students and adults among a variety of education programs, including transfer education, general education, remedial courses, and occupational programs designed to enrich the community environment. Within this general framework there should be opportunities for varying patterns of development and for the provision of particularly strong specialties in selected colleges.

Burton R. Clark, <u>The Open Door College: A Case Study</u> (New York: McGraw-Hill Book Company, 1960), p. 84.

⁴Carnegie Commission, <u>The Open-Door College</u>, p. 17.

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A recent report issued by the College Entrance

Examination Board reveals that there are 40,000 students, or
about one out of every nine students enrolled in day programs,
at 180 midwestern community colleges, already involved in
education programs of a special nature through remedial
courses, special academic skills services or formal developmental programs in midwestern community colleges.⁵

This statistical reporting of one student in nine being in an educational program of a special nature to improve his chance of academic success seems low. Medsker and Tillery state, "It is estimated that thirty to fifty percent of students enter the open-door college in need of basic skills required for college study." Another report states that seventy percent (190,000 students) failed the qualifying exam for transfer level English courses in California in 1965. It may be that the necessary programs or courses are not available in the Midwestern schools, or it may be as Schenz reported when he stated, "About half

⁵Richard I. Ferrin, <u>Developmental Program in Mid-Western Community Colleges</u>, Higher Education Surveys Report No. 4 (Evanston, Illinois: College Entrance Examination Board, February, 1971), p. 7.

⁶Leland Medsker and Dale Tillery, <u>Breaking the Access Barriers</u>. (New York: McGraw-Hill Book Company, 1971), p. 65.

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(forty-seven percent) of the community junior colleges admit low-achieving students as 'regular' students so as not to 'label' them." 7

The concept of the open-door college is tenable only if the students achieve, or at least have an honest chance to achieve, their educational goals. John E. Roueche examined the plight of the "remedial" student in the community colleges. In Salvage, Redirection or Custody?, he reports that community colleges will be called upon to assume increased responsibility for remedial education in the process of higher education. He also states that the existing remedial programs are not adequate to the task and new approaches must be developed.

William Moore, Jr. in <u>Against the Odds</u> also makes the point that the community colleges are not adequately serving the needs of the so-called marginal students. He maintains that the blame for failure is not with the student but with the teachers and administrators not doing their jobs properly.

⁷Robert F. Schenz, "An Investigation of Junior College Courses and Curricula for Students with Low Ability." (Unpublished doctoral dissertation) Los Angeles: University of California, School of Education, 1963, p. 11.

⁸Roueche, <u>Salvage, Redirection or Custody?</u>
(Washington, D. C.: American Association of Junior Colleges, 1968), p. 5.

⁹William Moore, Jr., Against the Odds (San Francisco: Jossey-Bass Inc.), 1970.

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Studies at Macomb County Community College, the largest community college in Michigan, indicated that the local situation was much like the situation described by Clark in The Open Door College. A study by the Counseling Department found that 87 percent of the entering freshmen wished to transfer to a senior institution, but only about 10 percent apparently did transfer. A profile of the students in the study revealed that 86 percent of them had a "C" or lower high school record. This 10 percent transfer level is below the often cited report that about 33 percent of the entering community college students transfer. In addition to the low high school grades, the condition existed where over half of the students were part-time students and the college was still in its beginning stages.

Another study of 100 students who applied in 1963 indicated that 87 percent of the students wished to transfer to a senior institution. 11 A follow-up study of these

¹⁰ Educational and Cultural Development Program-Education and Progress Report (Warren, Michigan, 1968), p. 8.

¹¹Sara Chalghian, <u>A Follow-Up Study of 148 Applicants</u> for the Fall, 1963 Semester (Warren, Michigan: Division of Basic Education, 1966), (mimeo).

percent earlier of transfronted by the enter senior in students

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in Cali Evaluat Califor students found that only 2 percent graduated and only 11 percent earned as much as one year's worth (32 credit hours) of transfer credit. 12 Again, these figures fall below those cited by Medsker when he reported that about 33 percent of the entering community college students transferred to a senior institution and about 32 percent of the entering students graduated. 13

It should also be noted that from 40 to 60 percent of the students enrolled in remedial English classes in California earned a grade of D or F. Only 20 percent of the students enrolled in these remedial courses later enrolled in college credit courses. 14

There is evidence that the educational needs of a large proportion of the community college population are not being effectively dealt with. It is apparent that new approaches based upon curricular experimentation, innovation,

¹² Educational and Cultural Development Program-Evaluation and Progress Report, pp. 8-9.

¹³Leland Medsker, <u>The Junior College: Progress and Prospect</u> (New York: McGraw-Hill, 1960), p. 92ff.

¹⁴Richard M. Bossone, "Remedial English Instruction in California Public Junior Colleges: An Analysis and Evaluation of Current Practices," (Sacramento, California: California State Department of Education, 1966), p. 61.

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and research must be tried to bridge the gap between the colleges' claims to serve student needs and the actual results.

Purpose of the Study

The purpose of this study is to evaluate the academic performance of students enrolled in the Educational and Cultural Development (ECD) Program at Macomb County Community College (MCCC). The program consists of a comprehensive general education curriculum designed to serve the student who scores at the 60th percentile or lower on the American College Testing Program Aptitude Test Composite (ACT-C) score (based on national two-year college norms). 15 The study will be focused on comparing the academic performance of students in the ECD Program to the academic performance of similar students enrolled in the "liberal arts" program at MCCC. Students from the liberal arts program were chosen as the comparison group because they are the most similar group on campus. Also, students who successfully complete the ECD Program will most likely enter the liberal arts program for their second year of college study.

The inclusion of students below the 60th percentile was an arbitrary decision of the study committee that developed the basic format of the program.

The measures measure of attempted, (hours at a year, and e of 2.00+ du program wil

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The measures of academic performance are: persistence (measure of drop-out rate), grade point average, credits attempted, credits earned, graduation, earning 24 credit hours at a grade point average of 2.00+ during one academic year, and earning 58 credit hours at a grade point average of 2.00+ during two academic years. A description of the program will be included as a prerequisite part of the study.

Theory

The Educational and Cultural Development Program was designed to affect the personality development and to facilitate the academic achievement of students enrolled in the program. The aspects of personality development and academic achievement cannot be separated if a student who was only marginally successful in high school and who has standard test scores that indicate a low probability of success in college is to be academically successful in college. The student who was only marginally successful in high school, who comes from a non-college oriented background (as many community college students do), and who has accepted previous evaluation that he has limited potential for academic work, will have to develop a positive, more selfconfident attitude as well as learn to function in an academic role.

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the Exi Higher (Cambri It has been suggested that a powerful total environmental press is necessary to cause significant changes in students. Philip Jacob stated,

A look at whole colleges rather than just a selection of courses or other educational influences in isolation, reveals that sometimes a combination of factors can produce a distinctive, institutional atmosphere, a 'climate of values' in which a student is decisively influenced. 16

Nevitt Sanford was primarily concerned with the personality change aspect when he wrote:

In considering the determinants of personality change in college, it is our impression that the overall culture of the college is more important, in general, than any particular factor that can be isolated within a single college environment. 17

These points are supported by Dressel and Mayhew, who found that student values were more likely to be changed where core programs of general education were carefully

¹⁶Philip Jacob, <u>Chanqing Values in College</u> (New York: Harper, 1967), p. 99.

¹⁷Nevitt Sanford, "Theories of Higher Education and the Experimental College," in Seymore E. Harris (ed.)

Higher Education in the United States: The Economic Program (Cambridge, Mass.: Harvard University Press, 1960), p. 79.

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integrated and the educational experiences were not confined to courses. 18 These suggestions by Jacob, Sanford, Dressel and Mayhew were part of the rationale for the design of the ECD Program.

Since the ECD Program is one of several curricula at MCCC, it is not possible to use the entire college in the manner referred to by Jacob and Sanford. Rather, the "total package" is built into a college-within-a-college concept. This "total package" includes several features. First, the student attends all of his classes with the same set of classmates. Second, the Program has a separate faculty which teaches primarily in the Program. team-teaching method is used to teach a set of courses rather than unrelated, isolated classes. Fourth, curricular and extra-curricular activities are unified as much as possible into a coherent package. Fifth, an attempt is made to develop a sense of identification in the student so that he "identifies" positively with the Program and the people associated with it.

¹⁸ Paul L. Dressel and Lewis B. Mayhew, <u>General</u>
<u>Education: Exploration in Evaluation</u> (Washington, D. C.:
<u>American Council on Education</u>, 1954).

The student's initial college experience is of critical importance, and special emphasis should be placed upon it. The work of B. Bloom and M. Freedman indicate that this "total package" approach to college education should occur during the freshman year and not after the student has been in college for some time.

Benjamin Bloom concluded,

...the environment may have its greatest effect on individuals in the first year or so that they are within it...As individuals leave one environment and enter another they seem to be especially susceptible to the effects of the new environment in the initial period in the new environment.

These remarks by Bloom were supported by Mervin Freedman when he reported,

Basic changes in qualities of character, outlook on life, and fundamental personality characteristics are consolidated by the end of the sophomore year.

¹⁹Benjamin S. Bloom, <u>Stability and Change in Human</u>
<u>Characteristics</u> (New York: John Wiley and Sons, Inc., 1964),
p. 196.

Mervin B. Freedman, "Studies of College Alumni" in N. Sanford, <u>The American College</u> (New York: John Wiley and Sons, Inc., 1962).

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The influence of peer-group relationships must be recognized and directed in accordance with educational objectives. Nevitt Sanford wrote,

What students learn in college is determined by their fellow students; by the norms of behavior, attitudes, and values that prevail in the peer groups to which the students belong.21

Theodore M. Newcomb has also studied the influence of peer-group relationships and suggests that peer group influences should be used to further educational objectives. He recommends,

Larger colleges should be composed of smaller units...; and peer groups' influence is likely to further the education goals if arrangements concerning college (or subcollege) membership, living-group membership, and classroom experience are so dovetailed that groups of individuals who are important to one another come to share many interests, including intellectual ones.²²

Accordingly, an attempt is made in the ECD Program to facilitate the rapid formation of college-oriented peer groups of students. The students are scheduled into units

²¹Nevitt Sanford, The American College (New York: John Wiley and Sons, Inc., 1962), p. 463.

²²Theodore M. Newcomb, "Student Peer-Group
Influence," in N. Sanford, The American College, p. 486.

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of 20 students who attend all of their classes together.

The students are given assignments in which cooperative small group efforts are necessary for successful completion.

Assignments that require the attendance of events off campus are also made. The students are encouraged to attend these events together.

The student behavior will tend to develop in accordance with the type of treatment that they receive from others. Peck and Havighurst observed,

The only way to obtain genuinely friendly treatment from others for any length of time is to treat them in the most friendly, considerate way possible. The only way to breed a reasonable attitude and effective reasoning powers in other people is to be consistently and patiently reasonable with them... The only way to beget dependably stable, sincerely motivated, ethical behavior from others is to treat them in exactly this way.²³

Robert Rosenthal and Lenore Jacobson suggest that the expectations of the teacher will have an effect upon the performance of a student.²⁴ Their theory is based upon

²³Robert F. Peck and Robert J. Havighurst, <u>The</u>
<u>Psychology of Character Development</u> (New York: John Wiley and Sons, Inc., 1960).

²⁴Robert Rosenthal and Lenore Jacobson, <u>Pygmalion</u> in the Classroom (New York: Holt, 1968).

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an application of sociologist Robert K. Merton's theory of a "self-fulfilling prophesy" to the field of education.

The personal relationships between students and faculty will have an effect on the impact of college experience on students. Philip Jacob concluded,

...where influence is seen, faculty are likely to have value commitments which are firm and openly expressed, and are outgoing and warm in their personal relations with students. Influence is more pronounced where association between faculty and students is normal and frequent, and students find teachers receptive to unhurried and relaxed conversations out of class. 25

A special effort is made by the faculty of the ECD Program to incorporate these fundamentals of student-faculty relationships into their day to day activities. The students and faculty are on a "first-name" basis unless either the instructor or the student feels uncomfortable on that basis. The students are encouraged to drop into the faculty offices at any time they wish to talk to someone. Special events off-campus are incorporated into the curriculum, and the students and faculty attend these activities together.

The "Hawthorne Effect" can and should be stimulated and maintained in educational curriculum development.

²⁵Philip Jacob, <u>Changing Values in College</u>, p. 8.

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A Prob Genera Higher Nevitt Sanford stated, "If experimental colleges succeed because of their novelty, the university's task becomes relatively simple: it has to keep setting up experimental colleges and thereby creating a permanent 'newness'."²⁶

The preceding theories point to the need for a general education program based upon the following definition of general education by Horace T. Morse:

General Education...is more concerned with the learner than with the content, which may be organized or reshuffled with regard to traditional fields. Its goals are individual development in its various aspects, and it places emphasis upon behavior and social usefulness as well as upon intellectual development as an outcome of learning. It is a manifestatation of the democratic spirit in higher education, for it admits a wider scope of abilities and a far broader clientele.²⁷

The implications of Morse's definition of general education are incorporated as much as possible by the faculty of the ECD Program as the curriculum is shaped and activities

²⁶Nevitt Sanford, "Theories of Higher Education and the Experimental College," in Seymour E. Harris (ed.) <u>Higher Education in the United States: The Economic Problems</u> (Cambridge, Massachusetts: Harvard University Press), 1968.

Horace T. Morse, "Liberal and General Education: A Problem of Differentiations," in James G. Rice (ed.), General Education (Washington, D. C.: Association for Higher Education, 1964), p. 11.

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are planned for the students. The course "content" is kept flexible so that it can be modified each semester to best fit the needs and interests of the students. The individual development of the student is paramount, and the curriculum is chosen with that end in mind.

Areas of Interest

There are five areas of interest in this study. The first is to see if students in the ECD Program persist in college at the same level as do their counterparts in the Liberal Arts Program.

The second area of interest is to see if students in the ECD Program perform as well as, or better than, their counterparts in the Liberal Arts Program during their first year in college on the measures of credit hours attempted, credit hours earned, grade point average, and earning 24 or more credit hours at a 2.00 or higher grade point average.

The third area of interest is to see if the students from the ECD Program suffer a drop in performance as they move to the Liberal Arts Program for a second year of study.

The fourth area of interest is to see if the students from the ECD Program do as well during two years of college as the Liberal Arts student on the measures of credit hours

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attempted, credit hours earned, grade point average, earning
48 or more credit hours at 2.00 or higher grade point average,
and graduation.

The fifth area of interest is to see what happens to the level of Success II and graduation if the student records are examined after five semesters, instead of four.

Definition of Terms

In the context of this study, the following definitions of terms shall apply.

Academic success Earning sufficient credit hours at a grade point average of 2.00 or above (on a 4.00 scale) so as to qualify for an Associate degree or to transfer to a Baccalaureate degree-granting institution.

Community college A two-year institution of higher education, generally public, offering instruction adapted in content, level, and schedule to the needs of the community in which it is located. Offerings usually include a transfer curriculum (credit transferable toward a bachelor's degree), occupational (or terminal) curricula, general education, and adult education.

"Cooling out" process Giving the student a chance to reduce educational aspirations and find other alternatives to those aspirations.

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Comparison groups Those students who entered the Liberal Arts transfer program in 1967 and those students who entered the same program in 1968 with scores below the 61st percentile on the ACT-C. (See Liberal Arts Program for a typical student program.)

Developmental programs Specially organized programs that include a range of educational services to develop skills or attitudes that may or may not have anything to do with making a student eligible for another program. It is the intent of such programs to improve the academic skills and attitudes of the latent terminal student.

<u>Drop out</u> Withdrawing from college before completing a designated program of study.

Educational and Cultural Development (ECD Program) A oneyear general education program with a curriculum designed
to provide a first-year college experience for the students
who place at the 60th percentile or lower on the American
College Testing Program Aptitude Test Composite score
(based upon national two-year college entrance norms). The
first semester courses in the ECD Program are Communications
150, Humanities 150, Natural Science 150, and Social
Science 150. The second-semester courses in the ECD
Program are Communications 160, Humanities 160, Natural
Science 160, and Social Science 160.

<u>Full-time student</u> A student shall be considered full-time when a minimum of twelve credit hours per semester is carried.

General education An education that is more concerned with the learner than with the content, and that places emphasis on the social usefulness of individuals as well as their intellectual development.

Graduation A student shall be considered to have graduated if he earns 62 or more credit hours at a G.P.A. of 2.00 or better.

Grade point average (G.P.A.) The grade point average is determined by dividing the total grade points earned by the total number of semester hours completed, whether passed or failed. The numerical equivalents of letter grades for determining the G.P.A. are: A=4, B=3, C=2, D=1, and E=0.

Latent terminal student A community college student who terminates his education by dropping out while pursuing transfer work.

Liberal Arts program A course of study designed for the student who wishes to transfer to a four-year college or university at the junior level. A typical Liberal Arts Program for the freshman year might include English Composition 110 and 120, Biology 100 and 110, Speech 100,

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Psychology 100, Political Science 100, Sociology 100, Music 131 and a Physical Education class.

Open-door college A college that will admit any person,
youth or adult, who can profit by what the college can offer.

Persistence A measure of the duration of a student's
uninterrupted stay in college. A student shall be considered
to have persisted if he earns any credit during a given
semester.

Quintile One-fifth. In this study it is one-fifth of the range of the ACT-Composite percentile score. Quantile I = 1-20; Quintile II = 21-40; Quintile III = 41-60.

Remedial work Work to remediate student deficiencies in order that a student may enter a program for which he was previously ineligible.

<u>Success I</u> Earning 24 or more credit hours at a grade point average of 2.00 or above (on a 4.00 scale) during the first year of academic study.

<u>Success II</u> Earning 48 or more credit hours at a grade point average of 2.00 or above (on a 4.00 scale) during the first two years of academic study.

<u>Treatment groups</u> Those students who entered the ECD Program in 1967 and 1968.

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Delimitations

This study is limited to students who achieved test scores at the 60th percentile rank or lower on the American College Test Aptitude Composite Score (two-year college norms) and entered either the Educational and Development Program or the Liberal Arts transfer curriculum at Macomb County Community College in September, 1967 or September, 1968.

Although the ECD Program was designed to affect personality development, this study is limited to measures of academic success and will not attempt to measure social or other affective motivation or development.

Time considerations will limit this study mainly to an examination of academic performance during two consecutive years, even though many students do not complete their formal education experiences at a community college in two uninterrupted years. The fifth semester will be examined, also, to ascertain trends and results.

Since the students were not randomly assigned to the experimental or the control group, the research design does not meet all of the conditions to be considered a true experimental design, and the range of generalization must be appropriately limited.

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The findings of relationships between the program and academic success can be viewed as associational, and a cause and effect relationship should not be assumed.

The study is limited to only those students who took the ACT test for admission to the college.

Although many students from both the Liberal Arts and the ECD Programs transfer to senior institutions, this study does not compare the numbers of students who transfer or their performance at the senior institutions.

Assumption

For the purposes of this study, it is assumed that the ACT test is a valid instrument for the grouping of students into comparable groups.

Overview

Chapter II will contain a description of the

Educational and Cultural Development Program at Macomb

County Community College. Chapter III will contain a review

of the literature related to the problem under study.

Chapter IV will contain a description of the sample, the

methodology, and the procedures used in the collection and

analysis of the data. Chapter V will contain the analysis

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of the data, the testing of the hypotheses and a discussion of the findings. Chapter VI will contain a summary with conclusions, implications, and recommendations for further study.

CHAPTER II

A DESCRIPTION OF THE PROGRAM

This chapter contains a description of the program with emphasis on general education, block scheduling, team teaching, the faculty, evaluation of faculty and program, counseling, administrative autonomy, and changes in the program.

Background

In the Fall of 1965, the Educational and Cultural Development (ECD) Program was initiated at Macomb County Community College (MCCC). The ECD Program was designed as an experimental program in general education for the freshman college student who had a "C" or lower grade-point average in high school and who fell below the 60th percentile on the American College Testing (ACT) Program composite score (two-year college norms). The program was intended to provide a complete first-year college experience in a more personalized setting than is usually experienced by

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at MCCC felt that it was possible to improve the educational experiences of the students who were least likely to succeed in the traditional curricula at MCCC.

During the 1964-1965 school year, a committee reviewed the need for a new curriculum and worked on possible designs for the program. A program director was selected, and he set about the task of recruiting a teaching staff.

The staff met for a four-week workshop during the summer of 1965 and wrote course and program objectives, selected materials, and developed tentative syllabi. The general charge given to the staff was that they were to develop a one-year college experience that would serve the student whether he terminated his college experience after that year or went on to further formal study.

The program rationale was stated in the following four points:

- 1. A significant and obvious disparity existed between the college curricula at Macomb County Community College and the actual educational outcomes and apparent needs of the students.
- A very pronounced difference existed between the educational and vocational aspirations of many Macomb students and their chances of attaining these aspirations based on past performance.

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- 3. There existed an increasing impersonality toward the student within the institution due to its rapidly expanding college enrollment of more than seven thousand students in September, 1965.
- 4. There existed a need to stimulate faculty experimentation, innovation, and exploration of approaches most appropriate to effective instruction at Macomb County Community College.

In addition to the rationale, program objectives were written in a very broad form to serve as guidelines for further program development. The objectives were:

- To increase the duration of the students' involvement in college experiences.
- 2. To improve students' chances of succeeding academically.
- 3. To increase the number of students who complete one or more of the following: associate degree programs, college career programs, or transfer to another institution.
- 4. To help students gain information about themselves and their relationship with others.
- 5. To help students assess their own goals and re-direct those which are unrealistic.
- 6. To develop positive relationships between students and faculty.
- 7. To stimulate the development of those primary group relationships among the students which further the overall goals of the program.

¹ Division of Basic Education, Evaluation and Progress Report, (Warren, Michigan: Macomb County Community College, 1968), pp. 7-8.

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- 8. To make the students' first year of college enjoyable as well as beneficial.
- 9. To encourage student involvement in the college environment through participation in a variety of co-curricular activities.
- 10. To encourage the personality development of students.
- 11. To assist students in developing broad understanding of the major fields of knowledge.
- 12. To help students draw relationships among the broad fields of knowledge.
- 13. To assist students in developing acceptable reading, writing, speaking and studying skills.
- 14. To help students develop the skill of critical thinking and apply it to the understanding of subject matter in the various areas.
- 15. To help students develop understanding of and tolerance for other individuals, groups, cultures, and ideas.
- 16. To assist students to become aware of their community and its resources.
- 17. To assist students to become actively involved in their community.
- 18. To assist students in the development of a variety of means by which they may creatively express themselves.
- 19. To assist students in accepting responsibility for their own educational development.
- 20. To promote instructional experimentation and innovation.²

^{2&}lt;u>Division of Basic Education, Evaluation and Progress</u>
Report, (Warren, Michigan: Macomb County Community College, 1968), pp. 12-19.

The basic format for the program is centered on a core of general education courses (See Appendix A for course descriptions). While the courses are listed here, the emphasis in the program is upon the learner and not upon course content. No attempt is made in the program to relate the specific objectives to specific courses. Rather than adhere to a single course syllabus, a team is able to revise its curriculum each semester to reflect the interests and specific needs of the students each semester. The plan of general education that was implemented consisted of five areas of study which were integated, or planned as a whole. The courses consisted of:

FIRST SEMESTER

SECOND SEMESTER

| Course | Credit Hrs. | Course | Credit Hrs. |
|--------------------|----------------|---------------------|----------------|
| Course | nis. | Course | nrs. |
| Communications 150 | 4 | Communications 160 | 4 |
| Humanities 150 | 3 | Humanities 160 | 3 |
| Natural Science 15 | 0 4 | Natural Science 160 | 4 |
| Social Science 150 | 4 | Social Science 160 | 4 |
| Orientation 150 | _1_ | Orientation 160 | 1_ |
| | 16 | | 16 |

This general education framework offers several features that suggest its use in a program designed for flexibility. The courses can be complete in and of themselves

Division of Basic Education, Evaluation and Progress
Report, (Warren, Michigan: Macomb County Community College,
1968), p. 12.

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for the student who takes no further formal studies. courses can be applied to a transfer program (i.e., the University College courses at Michigan State University) and have been accepted for full transfer credit at all senior institutions in Michigan, even if they are similar in name only to the courses at the senior institutions. The staff of the program is unaware of students having trouble transferring the credits (with the exception of the Orientation credit) and has knowledge of students transferring to most of the senior institutions in the State of Michigan. courses are applicable to any vocational or occupational program at Macomb County Community College that requires general education electives for completion. also serve to meet most of the specific course requirements to earn an Associate of Arts degree at MCCC. This flexibility permits a student to change his program of study without suffering any loss of time or credit that is frequently common when students change from one curricular program to another.

The general education format also offers a flexibility within each course that is not present in most traditional liberal arts courses that are content or subject matter

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centered. This permits the instructors to include concepts that readily integrate on a cooperative team-teaching basis.

Class time for the students in these courses is divided almost equally between large lecture classes of approximately sixty students and small discussion groups of approximately twenty students. The instructor buys time, in effect, by presenting lecture material to large groups where class size is not as important as it is when the emphasis is on discussion and class participation. The smaller classes help to personalize the educational process by allowing the instructor to quickly get to know the students, and vice versa. The discussion classes, even with the instructor as a part, also make it easier for all students to participate more actively in the educational process.

Block Scheduling

As a major part of the attempt to provide a total environment for the students, the students are block scheduled. The students are "blocked" into units of twenty when they register. These twenty students function as a unit for the semester. They attend all of their classes as a unit and will assume a group identity. This blocking, or

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grouping, facilitates the easy formation of friendships in the new and strange environment and soon leads to the formation of a college-oriented peer group for many of the students.

The schedule for the students is also blocked (See Appendix B for sample schedule). The five courses are mapped out so that the amount of time between classes is controlled, as is the duration of each school day. The amount of time between classes is controlled for two reasons. First, the majority of the students are employed, and it is a convenience to them not to have large amounts of wasted time during the school day. Second, the school does not have adequate physical facilities such as a student union or athletic building in which students may spend time between classes. There is virtually no place besides the library for students to spend time between classes. Approximately one hour per day is built into the students' schedule for them to use the Library or the Programmed Learning Center. The students are also encouraged to use these facilities at other times.

The use of block scheduling also facilitates registration for the student. Often when a student goes to register, he is confronted with several variables which he must coordinate. Are the "right" classes being offered?

Are the courses already filled with students? Do the classes

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conflict in times? Are there large amounts of wasted time between classes? When the student registers for a Block, these conflicts have already been worked out, and all that the student must do is choose between available blocks.

Team Teaching

One feature of the ECD Program that is not often found in community college teaching is team teaching. A team consists of one instructor from each of the four main instructional areas—communications, humanities, natural science, and social science. Each team instructs six blocks of students, and together they form a complete entity.

One advantage of the team structure is that assignments can be integrated. That is, two or more instructors can give a joint assignment that will be submitted to them and graded by each or jointly graded. All four instructors may deal with a major concept like violence or war. The communications instructor may deal with the media as they relate to the major topic, as well as coordinate any written assignments. The humanities instructor may deal with the topic as it is expressed in art forms. The natural science instructor may deal with technological applications as they relate to the topic, and the social science instructor might

be dealing with the psychological and sociological implications of the topic. Other topics that are treated in a similar manner might be evolution, human development and growth, ecology, population, and utopianism.

It is also possible that only two or three instructors will be working cooperatively on a unit. The flexibility and interdisciplinary nature of the general education format are necessary for this type of curricular integration.

The team can integrate not only content but the teaching of basic skills as well. It is possible to put a heavy emphasis on reading, writing, note-taking, or speaking skills at any particular time, as the need is identified.

The block scheduling makes it convenient to use special speakers and films, as well as to take field trips. Because each instructor that a student has is in on the planning, a student does not have to worry about missing other classes to attend these special events. It is easy for a team to suspend or alter the schedule any day to accommodate anything that the team may want to do.

It is easier for a team of instructors to identify individual students' strengths and weaknesses and to adjust for them than it is for one individual to do the same. A student may benefit more from his education if his needs are

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quickly identified. It is also more likely that these needs will be found if more than one instructor is looking for them.

Faculty

The instructors in the Division are selected specifically to teach in the ECD Program. Their sole commitment and responsibility is to the Program. The faculty are chosen from individuals who apply to teach in the program. A faculty hiring committee composed of instructors from the Division screens applications and interviews applicants for teaching positions when vacancies occur. A recommendation is then made to the Division Director, who acts upon it. The criteria for hiring include several points. First, the College requires a Master's Degree in an academic discipline. Second, a broad background of preparation in several areas is preferred to a concentration in one academic area. while the applicant is expected to be well versed and highly qualified in his subject matter field, it is also expected that he will be empathetic, able to motivate students, and able to work with students on an individual basis. important factor is the concern for the student that is demonstrated by the applicant.

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Instructors who find themselves uncomfortable teaching in the program may transfer to another division of the
college that they are qualified to join if there are openings.

Individuals who teach in the program are encouraged to further their professional growth by taking additional graduate study, attending workshops, seminars, and institutes as well as by attending appropriate conferences.

Evaluation of Faculty and Program

Both the faculty and the program are evaluated by the students. Each semester every instructor is evaluated by each of his students (See Appendix C for sample form).

The instructor and the Division Director each receive a copy of the results which may be used in the annual evaluation of the instructor by the Director. Besides giving an overall impression of the instructor, the form is used as a diagnostic instrument to help the instructor improve his teaching.

Each semester every student also has the opportunity to evaluate each individual course as well as the total program (See Appendix D for sample form). The results of this program evaluation are used by the individual instructors as well as the teams in assessing the strengths and weaknesses of the methods and materials used during the semester.

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These evaluation procedures permit the student a measure of involvement not found in most curricular programs.

They allow the student a chance to help identify the strengths and weaknesses of instructors, teams, courses, materials, and the overall program itself.

The program has a faculty evaluation committee which is responsible for designing, revising, and administering the Faculty and Program evaluation. The committee also compiles and analyzes these basic data and reports back to the faculty as a source of material for discussion.

The faculty evaluation committee also compiled a description of the program and a report of the first two years of the program that was entitled Evaluation and Progress Report, June, 1968. This report indicated that the program was functioning effectively. The research design and the statistical analysis of the data left much to be desired, and the findings may be open to question. However, the study found that the ECD students roughly equalled a Liberal Arts comparison group in persistence and grades. The ECD students did earn slightly more credits.

⁴Division of Basic Education, Evaluation and Progress Report, (Warren, Michigan: Macomb County Community College, 1968).

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Counseling

Group and individual counseling is provided to students enrolled in the program. The students are registered for a one-hour orientation course that is taught by either a counselor or instructor from one of the subject matter areas. The main purposes of the orientation class are to acquaint the student with the college environment, help him solve any problems that he might encounter, and help with educational and vocational planning. The classes also facilitate contact between a counselor and a student who wants or needs individualized counseling. The counseling is provided either by a trained counselor who teaches the class or by the faculty member who teaches the class.

One counselor is assigned to the Division full-time, and other counselors are assigned to the Division on a part-time basis as they are needed. The full-time counselor maintains an office in the same area where the instructors have offices, so that he is easily accessible.

Faculty members play a large role in advising and informally counseling students. An open-office policy prevails, and students are encouraged to drop in to talk informally or to discuss special issues or concerns.

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Administrative Autonomy

The program exists as a separate division of the college. The budget, scheduling and staffing are all controlled by the Division Director to the same extent that comparable administrators elsewhere on campus control these functions. The faculty is responsible only to the Division Director of the program and not to the division directors of their respective subject matter areas. This autonomy is maintained so that the program is seen as a primary concentration of effort and not an area of secondary interest or concern. The faculty is able to concentrate on teaching in the program without being distracted by other assignments.

Out-of-Class Experiences

Out-of-class experiences are used as instructional aids in the Division. These range from special films and guest speakers to trips of several days' duration. Local field trips are taken when appropriate, and each semester a major trip is planned for those students interested and able to go. The faculty discovered that many of the students had never taken a major trip away from Detroit, and they felt such an experience would be valuable to the students. It was

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hoped that these trips would broaden the students' perspectives and be enjoyable. Past trips have included visits to New York City, Chicago, and Montreal. Efforts are made to relate the experiences on the trips to concepts under study in the various classes.

Informal contacts between faculty and students are encouraged. A majority of the students feel that these contacts are both educationally useful and enjoyable. These contacts range from conversation over a cup of coffee to participating in intramural athletic events. Both the local and the extended field trips permit the faculty and the students to interact in situations outside the formal class-room sessions.

Changes

Since the inception of the program, it has undergone several fundamental changes. One of the changes is that a concerted effort is no longer made to redirect the goals of the student. Program Objective Five has been de-emphasized. At the time the program began, it was felt that many students had unrealistically high goals in the light of their past background and their scores on measures of academic potential. A major part of the program was to direct these students to

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goals that were deemed more appropriate by instructors and counselors. The experience of the staff indicated several things: 1) the staff was in no position to judge the appropriateness of student goals; 2) it was difficult to convince the students to change their goals; and 3) if the students were given appropriate help, the original goals might no longer be unrealistic. The efforts of the staff have turned from redirecting students to helping them examine their goals and then achieving those goals.

During the first years, emphasis was placed on subject matter content, and the faculty was orientated along subject matter lines. The instructors in each area met and collectively decided the course content. By the 1967-1968 school year, the emphasis had shifted to the teaching teams composed of instructors from each subject-matter area. These teams focused more on student needs and less upon subject matter content. In order that the teams might function as units, each team selected and developed the subject matter content of their courses.

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CHAPTER III

A REVIEW OF THE LITERATURE

This chapter contains a survey of literature pertinent to the Educational and Cultural Development Program at Macomb County Community College.

From the many categories of literature about the community college movement, the following five areas are included in the study. In the first category, literature about the student need for compensatory education in community colleges is explored. The second category contains an exploration of literature about existing remedial programs on the community college level, and the third category contains material related to the need for innovation in instruction at community colleges. The fourth category is the concept of general education, while the fifth category deals with an examination of studies similar to this one.

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Literature Regarding Student Need for Compensatory Programs

As more and more students enroll in the community colleges, there is a continued need to assess the entering student population to determine the needs so that they can best be met. K. Patricia Cross states in The Junior College Student: A Research Description, "The academic ability of students is one of the best researched areas in higher education." She goes on to sum up a considerable number of studies of traditional tests of academic ability by saying, "The mean scores for students attending four-year colleges exceed those of students in two-year colleges, and two-year college students score higher as a group than high school graduates that do not go on to college."2 She goes on to acknowledge that while there is total agreement on this point, the traditional measures of ability may not be appropriate for the typical community college student, because they are poor predictors of success, especially if the success is not found in the transfer program. Cross

¹K. Patricia Cross, <u>The Junior College Student: A</u>
Research Description (Princeton, N. J.: Educational Testing Service, 1968), p. 11.

² K. Patricia Cross, <u>The Junior College Student</u>, p. 11.

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also reports the junior college students often indicate that they feel they are academically inferior.

The following sources were cited in the first chapter but need to be included in this section to re-emphasize the need for programs of compensatory education at the community college level.

John E. Roueche reports a survey of the 270,000 freshmen who entered California's public junior colleges in 1965. This survey found that almost 70 percent failed the qualifying exam for English 1 A (or the equivalent transfer course). The same report stated that from 40 to 60 percent of the students enrolled in remedial English classes in California public junior colleges earned a grade of "D" or "F", and only 20 percent of the students enrolled in these remedial courses later enrolled in college credit courses. 4

In a survey sponsored by the College Entrance
Examination Board, it is reported that over 40,000 students

³Richard M. Bossone, "Remedial English Instruction in California Public Junior Colleges: An Analysis and Evaluation of Current Practices." Sacramento, California: California State Department of Education, September, 1966 (Mimeo) cited in John E. Roueche, Salvage, Redirection or Custody?, p. 13.

⁴Richard M. Bossone, "Remedial English Instruction ...," in John E. Roueche, <u>Salvage</u>, <u>Redirection of Custody?</u>, p. 13.

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(Washi 1968. in 180 Midwestern community colleges were involved in some form of developmental education during the Fall, 1970 term.⁵ These students were identified as needing special help of one form or another to successfully complete their college experience.

A number of books have identified the special task of the community college as helping those students who are less academically able. It was in 1960 that Burton R. Clark wrote that the community college should be helping the so-called latent terminal students. Clark was concerned with the student who enrolled in a junior college but dropped out before completing a formal course of study.

John E. Roueche put the problem of the low ability student in sharpest focus with <u>Salvage</u>, <u>Redirection or Custody</u>?, a book that explored the need for (as well as the existing condition of) remedial education in the community/junior college. The was his conclusion that traditional

⁵Richard I. Ferrin, <u>Development Programs in Midwestern</u>
<u>Community Colleges</u> (Evanston, Illinois: College Entrance
Examination Board, 1970), p. 7.

⁶Burton R. Clark, <u>The Open Door College</u> (New York: McGraw-Hill Book Co., 1960).

⁷John E. Roueche, Salvage, Redirection or Custody?
(Washington, D. C.: American Association of Junior Colleges),
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approaches simply are not doing an effective job of educating the low-achieving student.⁸

One of the most recent books to focus on the "high-risk" student has been written by William Moore, Jr. His book, Against the Odds, depicts a number of situations in which low achieving, or as he terms them, "high-risk" students, are not being served by the community college.

In <u>Breaking the Access Barriers</u>, Medsker and Tillery say, "It is estimated that 30 to 50 percent of students enter the open-door colleges in need of basic skills required for college study." 10

The consensus seems to be that there is a very substantial number of students who are seriously in need of special help in order to make their college experience successful.

⁸John E. Roueche, <u>Salvage</u>, <u>Redirection or Custody?</u> p. 57.

⁹William Moore, Jr., Against the Odds (San Francisco: Jossey-Bass, Inc., 1970).

¹⁰ Leland L. Medsker and Dale Tillery, <u>Breaking the</u>
Access Barriers (New York: McGraw-Hill Book Company, 1971),
p. 65.

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Literature Regarding Remedial and Developmental Programs

The open door policy of the community college has been well expressed by Blocker, Plumber and Richardson in the following manner:

Some colleges will set certain selective standards for admission and retention of students, but community colleges will keep their doors open to any person, youth or adult, who can profit by what the college can offer, and the colleges will strive to offer what the people can profit by. 11

One consequence of this open-door policy is that many students whose ability or skill level would have been deemed too low for college work in the past are now entering community colleges. It is now the responsibility of the colleges to provide instruction from which these students can benefit.

In the past, remedial courses primarily have been relied upon to remedy student deficiencies. A recent survey of 76% of the 180 public community colleges in the Midwestern states revealed that about 80 percent of them offer remedial courses. 12

¹¹Clyde E. Blocker, Robert H. Plummer, and Richard Richardson, <u>The Two-Year College: A Social Synthesis</u> (Englewood Cliffs, N. J.: Prentice-Hall, 1965), p. 482.

¹² Richard I. Ferrin, <u>Developmental Programs...</u>, p. 8.

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Educat 36:18Remedial courses have fallen under considerable criticism in recent years. Gordon and Wilkerson stated the criticism most bluntly when they wrote, "The somewhat dreary pattern of remedial courses...has plagued many generations of low achieving students with little benefit to most of them." 13

Richardson and Elsner wrote in the same vein when they observed,

Remedial courses do not meet the needs of the educationally disadvantaged, a group that comprises one-third or more of the entering classes of many open door urban community colleges. As a corollary, selection for remedial-type courses should be done as carefully as for the most demanding associate degree programs. If remedial courses are to have any chance of success, they must utilize specially trained instructors and cannot become the dumping grounds for a bewildering array of students not wanted in more academically respectable courses. 14

Kendrick and Thomas have made an extensive review of the research on compensatory education and find, "Evidence points to the conclusion that existing compensatory programs and practices have made little impact in eradicating the

¹³Edmund W. Gordon and Doxey A. Wilkerson, <u>Compensatory Education for the Disadvantaged</u> (New York: College Entrance Examination Board, 1966), p. 155.

¹⁴Richard C. Richardson and Paul A. Elsner, "General Education for the Disadvantaged," <u>Junior College Journal</u> 36:18-11; December, 1965.

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problems of disadvantaged college students, nor have the majority of colleges accepted this area as their role." 15

The problem of the low achieving student is acute.

One study reveals that as many as 75 percent of the students who scored below the 15th percentile on a standard aptitude test and who had below average high school grades withdraw from college the first year. 16 Richard Bossone examined remedial English courses in California junior colleges and reported that in one typical college, of the 80 percent of the entering students who enrolled in remedial English, only 20 percent continued on into regular college English classes. 17

The Higher Education Surveys Report No. 4, <u>Develop-mental Programs in Midwestern Community Colleges</u>, reports a trend toward the use of specific programs designed to aid a

¹⁵s. A. Kenderich and Charles L. Thomas, "Transition from School to College," in Edmund Gordon (ed.), Education for Social Disadvantaged Children. Review of Educational Research, Vol. 40, No. 1, 1970, pp. 151-179.

Robert T. Schenz, "An Investigation of Junior College Courses and Curricula for Students with Low Ability" (unpublished doctoral dissertation, Los Angeles: University of California, School of Education, 1963), p. 141.

¹⁷Richard Boosone, "Remedial English Instruction...," p. 1.

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student in the development of his basic academic skills as well as present a body of material to be learned. 18

This trend is toward presenting a "package" of content material, tutoring, non-academic as well as academic counseling, and basic skills development. There are at least 40 such programs in the Midwest now, with the majority of them started in the last three years.

The colleges must be concerned with more than just providing more of the same types of remedial courses as the remedy for student deficiencies. Medsker and Tillery sum up much of the recent study of remedial approaches when they state, "Self-identity, motivation, and idiosyncratic barriers to learning come closer to the real problems of the undereducated than the need for remedial work." 19

Need for Innovation

One option in dealing with the problem of low ability students in the open-door colleges is to innovate and try new

¹⁸ Richard I. Ferrin, "Developmental Programs...," p. 10.

¹⁹L. Medsker and D. Tillery, <u>Breaking the Access</u>
Barriers, p. 85.

approaches to the problem. There has been one voice, heard above all others, encouraging experimentation and innovation in the community colleges. Although his interest began earlier, it was in 1964 that B. Lamar Johnson published Islands of Innovation, which promoted the concept of experimentation in the two-year colleges. In this book he reported on innovations and experiments in the use of faculty services in junior colleges. He has expanded upon the theme of innovation in other works, New Directions for Instruction in the Junior College²¹ and Islands of Innovation Expanding. 22

Medsker and Tillery support the idea of a fresh approach as applied to dealing with the problems of the low ability student when they comment, "The new look in developmental education is long overdue...." and "It seems imperative that additional resources be brought to the efforts of reeducation." 23

²⁰B. Lamar Johnson, <u>Islands of Innovation</u> (Los Angeles: University of California, 1964).

²¹B. Lamar Johnson, <u>New Directions for Instruction in the Junior College</u> (Los Angeles: University of California, 1964).

²²B. Lamar Johnson, <u>Islands of Innovation Expanding</u> (Beverly Hills: Glencoe Press, 1969).

²³Medsker and Tillery, Breaking the Access Barriers,
p. 68.

General Education

Most of the literature surveyed neglects curricula for the low ability student. It can be inferred from the literature that remedial drills in specific courses are not sufficient to motivate or improve the ability level of the students. It appears, however, that what has been defined in the past as general education is an appropriate curriculum for the low ability student as well as the student who desires to transfer to a four-year college.

The Harvard Committee on Education notes in the book

General Education in a Free Society that general education

has special properties:

Education is broadly divided into general and specific education; our topic now is the difference and the relationship between the two. The term, general education, is somewhat vague and colorless; it does not mean some airy education in knowledge in general (if there be such knowledge), nor does it mean education for all in the sense of universal education. It is used to indicate that part of a student's whole education which looks first of all to his life as a responsible human being and citizen; while the term, special education, indicates that part which looks to the student's competence in some occupation.

These two sides of life are not entirely separable, and it would be false to imagine education for the one as quite distinct from education for the other.²⁴

In a more recent application, H. T. Morse compares liberal and general education:

Liberal education is considered to be subjectcentered, with a fairly fixed body of content material, logically organized. Its goal is also the stimulation of reflective thinking, with less emphasis on behavior, and it draws its clientele from the intellectual elite. It implies a concentration in depth with frequently a more intensive cultivation of one or two special fields of knowledge. clings closely to tradition in the kinds of learnings it sanctions. General education, on the other hand, is more concerned with the learner than with the content, which may be organized or reshuffled with regard to traditional fields. Its goals are individual development in its various aspects, and it places emphasis upon behavior and social usefulness as well as upon intellectual development as an outcome of learning. is a manifestation of the democratic spirit in higher education, for it admits a wider scope of abilities and a far broader clientele. 25

²⁴Harvard Committee on Education. <u>General Education</u> <u>in a Free Society</u> (Cambridge: Harvard University Press, 1945), p. 51.

²⁵H. T. Morse, "Liberal and General Education: A Problem of Differentration," In J. R. Rice (ed.) General Education (Washington, D. C.: NEA Association of Higher Education, 1964).

These statements about general education indicate its potential as a curriculum for all students, including those with low ability.

The principles and assumptions supporting the need for general education have been stated in many forms and in many places. B. Lamar Johnson listed them as follows:

- 1. General education must be based on the characteristics of students and of society.
- 2. All areas of experience, at home and in the community, as well as in the college, interact to affect the student's growth.
- 3. The junior college will not complete the student's general education; rather, it will aim to equip and encourage him to pursue the goals of general education throughout his life.
- Students in California junior college differ greatly in experiences, needs, capacities, interests, and aspirations.
- 5. The general education program must promote the growth and development of each individual student on the basis of his particular abilities, interests, and other characteristics.
- 6. The final test of a program of general education is changed student behavior, motivated by the student's desire to improve himself and society. 26

²⁶B. Lamar Johnson, <u>General Education in Action</u>
(Washington, D. C.: American Council on Education, 1952).

The value of a program of general education as a learning experience that conveys the interrelationship of knowledge is found in a statement of Diablo Valley Junior College which is typical of community college catalogues:

Diablo Valley College encourages all students to have a body of common course experiences, the results of which are known in general education as the "educated man" in its broadest sense. This is man possessed of understanding and information about our culture both past and present. This is man able to operate as a rational human being in our society.

The faculty believes that the subject matter of general education should be presented in a way which shows how one piece of knowledge and life is related to many others--an integrated approach to teaching and learning. It believes the subject matter must be presented in a manner which will encourage the student to develop and evaluate values in terms of man's relationship to and with himself, to and with others, and to and with his environment. It further believes that this subject matter and these goals require a rigorous involvement in the content of the various academic disciplines and that this approach is appropriate for all students at this college. 27

This statement from the Diablo Valley Junior College

Catalogue is consistent with the rationale and objectives

Diablo Valley Junior College Catalogue, 1969-70, p. 10.

of the ECD Program except for the emphasis on the "...
rigorous involvement in the content of the various academic
disciplines...."

Cohen supports the idea that integrated, interdisciplinary general education is a valid form of education for the community college to offer if it leads to the learning of those values and behaviors through which a student may conduct a personally satisfying life and fulfill his responsibilities as a citizen. ²⁸

The problem of relevance is one that is commanding more and more attention in curriculum planning. Many students today see traditional courses based upon "common knowledge" as irrelevant. J. W. Reynolds in his book, The Comprehensive Junior College Curriculum, views general education with its built-in flexibility as an opportunity to include more relevant topics in the curriculum.²⁹

²⁸ Arthur M. Cohen, <u>Dateline '79: Heretical Concepts</u>
for the <u>Community College</u> (Beverly Hills: Glencoe Press,
1969), pp. 83-84.

²⁹J. W. Reynolds, <u>The Comprehensive Junior College</u> <u>Curriculum</u> (Berkley: McCutchan Publishing Corp., 1969).

In Against the Odds, William Moore, Jr., presents a thorough discussion of general education as the appropriate curriculum for what he describes as the high risk student. 30 He describes the program at Forest Park Community College of the St. Louis-St. Louis County Junior College District, in which general education is combined with basic skills development and intensive group and personal counseling.

In view of the thought that many low ability students will never be exposed to more formal education than a brief stay at a community college, Lewis Mayhew makes the point that a general education program should be so constructed that the students will have received a "defensible education" even if they never take another formal course. 31

Similar Studies

There have been a number of dissertations written in the last eight years that specifically deal with the problem of the low ability student in the junior/community college. Perhaps the most quoted of these is one by

³⁰William Moore, Jr., Against the Odds, p. 168ff.

³¹ Lewis B. Mayhew, "General Education: A Definition," in <u>General Education: An Account and Appraisal</u>, Lewis B. Mayhew, ed. (New York: Harper and Bros., 1960).

Robert F. Schenz. In 1963, he concluded a two-part study in which he (1) investigated junior college practices in providing particular courses and curricula for low ability students and (2) reported the progress of students with low ability in two junior colleges which followed contrasting practice in this regard. In the first part, he found that a vast majority of community colleges (91 percent of 236 colleges, each of which had an enrollment of 400 or more fulltime students) reported an open-door policy but only 20 percent had designed special courses or curricula for the low ability students. 32 He found a general awareness of the problem by college administrators but very little research regarding the success or failure of students with low ability. In the second part, he found little difference in persistence and grade point average between low ability students at Mt. San Antonio Junior College (with no special program) and those in Bakersfield College's Program "O" (a program with special emphasis for the low ability student).

Duane D. Anderson described and evaluated a noncollege credit program for academically handicapped students at Forest Park Community College in St. Louis. He compared

³²Robert F. Schenz, "An Investigation of Junior College Courses and Curricula for Students with Low Ability" (unpublished doctoral dissertation, Los Angeles: University of California, School of Education, 1963).

them to students in the regular curriculum. His conclusions were that students in the special general curriculum were less likely to drop out of college during the first year, that they earned higher grades as a group than the comparison group, and that they responded less favorably to their college experience than did the students in the comparison group.³³

Ronald Campbell conducted a study of 308 students admitted in 1956 to Henry Ford Community College on a trial basis. He found that 32 percent of the students earned a 2.00 or better grade point average, and 11 percent of them graduated. Trial admission basis students admitted directly from high school were better risks than those admitted from other colleges. The principal's recommendation, high school achievement, and college test scores did not appear to be significant in predicting academic success. His recommendation was that improvements could be made in the trial admission program as it was then offered. 34

³³Duane D. Anderson, "Evaluation of an Experimental General Curriculum Program for Academically Handicapped Students at Forest Park Community College, St. Louis, Missouri" (unpublished doctoral dissertation, Ann Arbor, Michigan: University of Michigan, 1969).

³⁴Ronald Campbell, "A Study of the Academic Performance of Students Who Were Admitted to Henry Ford Community College on a Trial Admission Basis in 1956" (unpublished doctoral dissertation, Detroit: Wayne State University, 1965).

The purpose of a study by Johnnie Ruth Clark was to develop a curriculum for the educationally disadvantaged student that increased understanding of the social attitudes and values needed for successful living. She concluded that this could be done by a well structured, orderly, yet flexible program within a "powerful" school environment. 35 She proposed a curriculum that would include courses in natural science, social science, humanities, and math. These would be team-taught in small classes by a faculty selected for its interest, knowledge, and ability to teach. Both academic progress and attitude changes would be evaluated. Remedial instruction in communication skills would be provided. The study did not implement or test the recommendations.

Merry Anne Gregory investigated the Development

Program at Grand Rapids Junior College. The Development

Program incorporated remedial courses, a limited load, and

intensive counseling in a one-semester program for entering

freshmen who had a 1.5 or lower high school grade point

average. She concluded that:

 The development program was successfully meeting the objectives for which it was designed.

³⁵ Johnnie Ruth Clark, "A Curriculum Design for Disadvantaged Community Junior College Students" (unpublished doctoral dissertation, University of Florida, 1966).

- A one-semester delay between high school and college increased the proportion of successful students as compared to those who went directly to college.
- 3. Most students in the program held positive feelings about the program at the end of the Development Semester. 36

The Basic Studies Program at Miami-Dade Junior College was studied by Russell Handy. He found that the program accomplished gains for the students enrolled during the first year of the non-credit program, but the program is subject to modification and adjustment to further demonstrate its effectiveness.³⁷

John E. Ravekes investigated a group of junior college students in California who were ineligible to enroll at a four-year college but were enrolled at Diablo Valley College. These students were not designated in any special way. He found that these students did as well as other junior college students and concluded that the salvage role assigned the junior college under California's system of higher education of preparing

³⁶Merry Anne Gregory, "An Analysis of the College Preparation Development Program for Low-Achieving High School Graduates at Grand Rapids Junior College" (unpublished doctoral dissertation, East Lansing: Michigan State University, 1966).

³⁷Russell Franklin Handy, "An Analysis of Academic Improvement in the Basic Studies Program in Miami-Dade Junior College" (unpublished doctoral dissertation, University of Miami, 1965).

ineligible students for transfer to four-year colleges appears to be realistic at Diablo Valley College. 38

John G. Losak reviewed a part of the remedial program at Miami-Dade Junior College, North Campus. He concluded that for all practical purposes, the remedial reading-writing program at Miami-Dade, as presently designed, does not produce any meaningful differences in student withdrawal from college, is not effective in raising the grade point average during the second semester of college enrollment to a "C" level, and is not effective in producing a score on a reading test or a writing test that is any higher for students in the remedial program than it is for students in a randomly selected control group who did not participate in the remedial program. Also, after one semester of remediation, the students in the Experimental Groups did not earn a significantly higher proportion of passing grades ("D" or better) in the Social Science, Humanities, or freshman English courses than did students in the Control Group who received no remediation. 39

³⁸ John E. Ravekes, "A Longitudinal Study of Low-Achieving High School Graduates Who Enrolled in a California Public Junior College" (unpublished doctoral dissertation, Berkeley: University of California, 1966).

³⁹John Losak, "An Experiment Designed to Evaluate a Program Developed to Aid the Academically Underdeveloped Junior College Student" (unpublished doctoral dissertation, Florida State University, 1969).

Summary

In reviewing the existing literature, several points are apparent. First, given the increased demand for higher education and the open-door policy of the community college, there are significant numbers of students who are in need of special help if they are to succeed in their quest for higher education. It is apparent that the traditional remedial courses and programs are not adequate to the task that they have been called upon to perform. That is, the remedial courses have not in the past brought the students up to a level where skill deficiencies had been corrected so that the students could be successful in other courses.

It is apparent that this area is one in which the colleges should innovate and experiment, because the existing remedial courses are for the most part inadequate. Because nost students in remedial programs never get beyond them, a combination of general education and skills improvement seems to be a viable program for the so-called low ability student.

From an examination of existing programs, it is parent that there is hope for helping the low ability udent given the right combination of curriculum, faculty dother resources. There was no discernable pattern, wever, that indicated what it was that made some programs accessful and others not successful.

CHAPTER IV

DESIGN

This chapter contains an overview, a description of the population, a description of the sample, the research design, and the procedures for analysis of the data.

Overview

Incoming freshmen students who do not elect a vocational or technical program at MCCC may register for either the ECD Program or the regular Liberal Arts program if they ave demonstrated (by low ACT scores and/or low high school rades) below average ability to do college work. The purpose f this study was to evaluate the academic performance of tudents enrolled in the ECD Program. Their academic performance was compared to the academic performance of similar tudents enrolled in the Liberal Arts Program at MCCC.

Seven measures were used to assess the relative fectiveness of the programs: persistence; credits attempted; edits earned; grade point average; Success I; Success II; finally, graduation.

A repeated measures analysis of variance was used to interpret the data. Each measure had a linear transformation performed on it so the scores would be comparable across measures. This transformation facilitated interpretation of interactions with the repeated measures dimension of the design. The linear transformation was performed by dividing each original score on a given measure by the square root of the mean square error (the within variance) for that measure. A completely balanced analysis of variance was used to analyze the data. The repeated measures analysis was used to test the hypotheses.

Population

Macomb County Community College is a suburban, comprehensive community college located adjacent to, and north of,

Detroit. Macomb County, with a population of 620,000, has
no other institution of higher education located within its
boundaries.

In 1967, 10,397 students registered for the Fall Semester. Of these, 4,243 were full-time and 6,154 were part-time, resulting in a full-time equated count of 6,784.

There were 2,209 full-time students in the Liberal Arts

Program and 597 full-time students in the ECD Program.

In 1968, 12,572 students registered for the Fall Semester. Of these, 5,060 were full-time and 7,512 were part-time, resulting in a full-time equated count of 8,145. There were 2,409 full-time students in the Liberal Arts Program and 513 full-time in the ECD Program.

The ECD Program is limited in size and does not admit all students who are qualified.

Sample

Separate samples were drawn for each of the five major areas of this study. For the study of persistence, all full-time students who enrolled in the Fall, 1967 and the Fall, 1968 Semesters were sorted into twelve groups by curriculum (two levels of interest), year of entry (two levels of interest), and ACT-Composite Score (three levels of interest). For the First Year, First-Second Year, Second ear, and Fifth Semester, the students who completed the espective time periods were divided into the same twelve coups. From each of the twelve sub-populations a sample of en students was randomly selected for each of the first four signs. For the Fifth Semester study, a sample of four udents per sub-population was drawn. The experimental sign is illustrated in Table 4.1.

Research Design

In this section, the research design and the related hypotheses for the five major areas of interest are presented.

Persistence The first major area was that of persistence.

Here, a comparison of the drop-out rate of the experimental and the control group was made.

Measures The dependent variables were Persistence I, a measure of the drop-out rate of the students in each group during the first year, and Persistence II, a measure of the drop-out rate of the students in each group during the two years. These measures of Persistence I and Persistence II were included in this study for two reasons. First, the drop-out rate for each program is of interest in itself. Second, if there is no difference in persistence, the inclusion of only the students who completed each respective time period will not effect the findings.

Hypotheses The null hypotheses will be stated in this chapter and the symbol "Ho" used to identify them.

The main concern in this part of the study was to see of the students dropped out of the experimental group at a reater rate than they did from the control group. The interction between groups and quintiles was of interest because tudents from certain quintiles may have dropped out at

different rates--depending on the treatment that they received. These concerns implied the examination of the following six hypotheses:

- Ho: There will be no difference between the experimental group and the control group mean scores on the measures of Persistence I and Persistence II.
- 2. Ho: There will be no interaction between treatment and measures.
- 3. Ho: There will be no difference between quintiles on the measures of Persistence I and Persistence II.
- 4. Ho: There will be no interaction between quintiles and measures.
- 5. Ho: There will be no interaction between treatment and quintiles.
- 6. H_O: There will be no interaction between treatment, quintiles, and measures.

<u>Design</u> The result of the sorting and randomizing procedure was a 2 X 2 X 3 X 2 balanced design. The sample was drawn from all full-time students who entered either program.

There were two treatment groups, two year-of-entry levels, three quintile ranges and two dependent variables. The experimental design is illustrated in Table 4.1.

TABLE 4.1

EXPERIMENTAL DESIGN - PERSISTENCE

| Independ | dent Variab | Dependent Variables | | | |
|--------------|-------------|---------------------|------------|-------------|--|
| Treatment | Entry Year | Quintile | First Year | Second Year | |
| Experimental | 1967 | I | | | |
| | | II | | | |
| | | III | | | |
| | 1968 | I | | | |
| | | II | | | |
| | | III | | | |
| Control | 1967 | I | | | |
| | | II | | | |
| | | III | | | |
| | 1968 | I | | | |
| | | II | | | |
| | | III | | | |

One Year

Because the ECD Program is a one-year program, it was of considerable importance to compare the academic achievement of students in the ECD Program to the academic achievement of students in the Liberal Arts Program at the end of the first year of college.

Measures The measures on which the two groups were compared were: credit hours attempted; credit hours earned; grade point average; and Success I.

Hypotheses The concern with the academic performance of students at the end of the first year was focused on the main effects for treatment and quintile. The interaction between

treatment and quintile was examined to see if students from certain quintiles were most affected by the treatment. These concerns implied the examination of the following six hypotheses:

- 7. H_O: There will be no difference between the experimental group and the control group mean scores on the measures of credit hours attempted, credit hours earned, grade point average, and Success I.
- 8. H_o: There will be no interaction between treatment and measures.
- 9. H_O: There will be no difference between quintiles on the measures of credit hours attempted, credit hours earned, grade point average, and Success I.
- 10. H_O: There will be no interaction between quintiles and measures.
- 11. H_O: There will be no interaction between treatment and quintiles.
- 12. H_O: There will be no interaction between treatment, quintiles, and measures.

<u>Design</u> The result of the sorting and randomizing procedure was a 2 X 2 X 3 X 4 completely balanced design. The sample was drawn from all full-time students in either program who completed the first year of college. There were two treatment groups, two year-of-entry levels, three quintile ranges, and four dependent variables. The experimental design is illustrated in Table 4.2.

TABLE 4.2

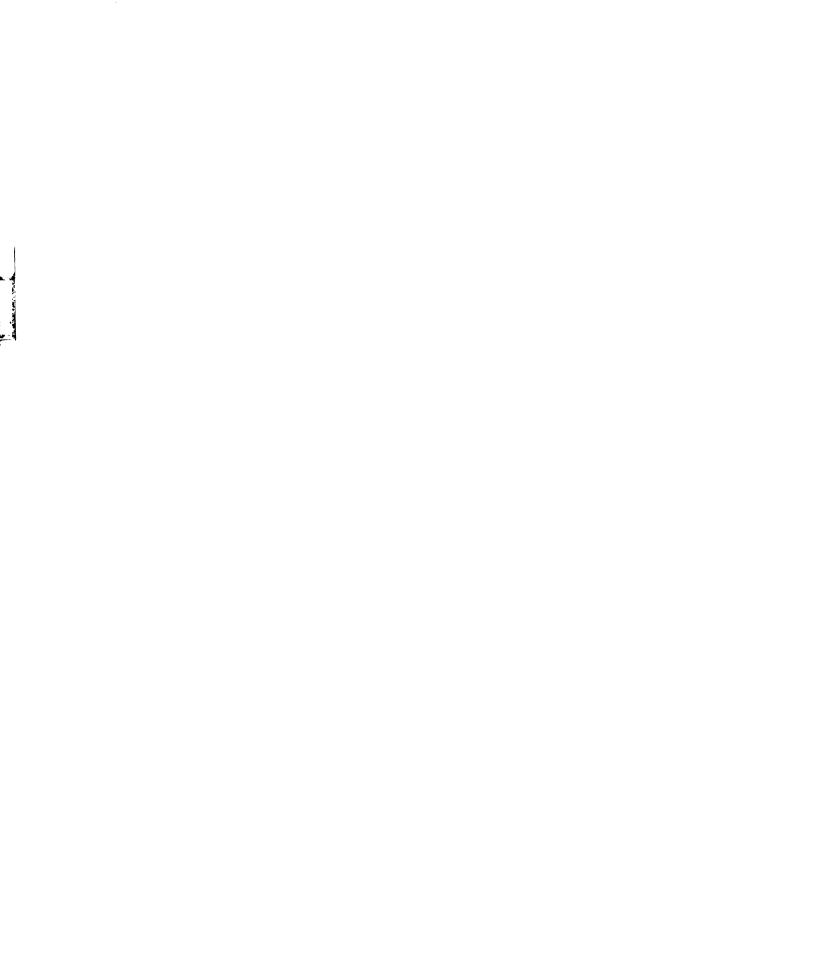
EXPERIMENTAL DESIGN - FIRST YEAR

| Independent Variables | | Dependent V | | /ariables | | |
|-----------------------|------------|-------------|----------------------|-------------------|--------------|-----------|
| Treatment | Entry Year | Quintile | Credits Attempted | Credits Earned | G.P. Average | Success I |
| Experi- mental | 1967 | I | | | | |
| | | II | | | | |
| | 1968 | I | | | | |
| | | II | | | | |
| | | III | | | | |
| Control | 1967 | I | | | | |
| | | II | | | | |
| | | III | | | | |
| | 1968 | I | <u> </u> | | ļ | |
| | | II | | | | |
| | | III | L | | L | |

First Year/Second Year

Since the ECD Program is only a one-year program, the students must take their second year of courses in some division of the college. This part of the study was an attempt to discover if the experimental group students perform at a different level during their second year in college than do the control group students.

Measures The measures were: first-year credit hours attempted; first-year credit hours earned; first-year grade point average; second-year credit hours attempted; second-year credit hours earned; and second-year grade point average.



Hypotheses The concern with comparing the first-year academic performance with the second-year academic performance came about because the experimental group students must change programs after the first year in college. It is important to see if the students continue to perform at the same level or if they have a significant change in performance. Therefore, the main emphasis in this section of the study was upon the variable year of performance and how it interacted with treatment, quintile and measures. These concerns implied the examination of the following six hypotheses:

- 13. H_O: There will be no difference between the first year of performance and the second year of performance.
- 14. Ho: There will be no interaction between year of performance and measures.
- 15. Ho: There will be no interaction between treatment and year of performance.
- 16. H_O: There will be no interaction between treatment, year of performance, and measures.
- 17. Ho: There will be no interaction between treatment, quintile, and year of performance.
- 18. Ho: There will be no interaction between treatment, year of performance, quintile and measures.

<u>Design</u> The result of the sorting and randomizing procedure was a 2 X 2 X 3 X 2 X 3 completely balanced design. The sample was drawn from all full-time students who completed two years of college. There were two treatment groups, two year-of-entry levels, three quintile ranges, two years of performance, and three dependent variables. The experimental design is illustrated in Table 4.3.

TABLE 4.3

EXPERIMENTAL DESIGN - FIRST/SECOND

| Independe | ent Va | riables | | | oender | nt Vari | | |
|-----------|------------|----------|----------|------------|--------|----------|------------|-----|
| | | | | Year l | | 7 | Tear 2 | |
| Treatment | Entry Year | Quintile | Cr. Att. | Cr. Earned | GPA | Cr. Att. | Cr. Earned | GPA |
| | | I | | | | | | |
| į į | 1967 | II | | | | | | |
| Experi- | | III | | | | | | |
| mental | | I | | | | | | |
| 1 | 1968 | II | | | | | | |
| | | III | | | | | | |
| | | I | | | | | | |
| | 1967 | _II_ | | | | | | |
| Control | | III | <u> </u> | | | | | |
| | | I | | | | <u> </u> | | |
| | 1968 | 11 | | | | | | |
| | | III | | <u> </u> | | | | |

Two Years

While it was of importance to examine the first year performance, it was also important to examine academic performance over a two-year time span.

Measures The measures of academic performance at the end of two years were: cumulative credit hours attempted; cumulative credit hours earned; cumulative grade point average; Success II; and graduation.

Hypotheses This section of the study was primarily concerned with the main effects for treatment and quintiles at the end of two years. The interaction between treatment and quintiles was again of interest, because students from a certain quintile may have been more affected by the treatment than the others. These concerns again led to the examination of six hypotheses:

- 19. H_O: There will be no difference between the experimental group and the control group mean scores on the measures of credit hours attempted, credit hours earned, grade point average, Success II and graduation.
- 20. H_o: There will be no interaction between treatment and measures.
- 21. H_O: There will be no difference between quintiles on the measures of credit hours attempted, credit hours earned, grade point average, Success II, and graduation.

- 22. H_O: There will be no interaction between quintiles and measures.
- 23. H_O: There will be no interaction between treatment and quintiles.
- 24. H_O: There will be no interaction between treatment, quintiles, and measures.

<u>Design</u> The result of the sorting and randomizing procedure was a 2 X 2 X 3 X 5 completely balanced design. The sample was drawn from two treatment groups, two year-of-entry levels, three quintile ranges, and five dependent variables. The experimental design is illustrated in Table 4.4.

TABLE 4.4

EXPERIMENTAL DESIGN - TWO YEARS

| Indepen | dent Vari | ables | | Deper | ndent | Variab | les |
|-----------|------------|----------------|----------|------------|-------|------------|------------|
| Treatment | Entry Year | Quintile | Cr. Att. | Cr. Earned | GPA | Success II | Graduation |
| Experi- | 1967 | I II III | | | | | |
| mental | 1968 | I II III | | | | | |
| Control | 1967 | I III | | | | | |
| | 1968 | I II III | | | | | |

Five Semesters

Since many students extend their stay at a community college beyond four consecutive semesters, it was of value to examine their records after an "extra" semester.

Measures The measures of academic achievement examined at the end of the fifth semester were Success II and graduation.

Hypotheses The main area of interest was to see if the students from the treatment group graduated or reached the level of Success II in significantly greater numbers than did students from the comparison group at the end of five semesters. The interaction between treatment and quintiles was of interest in that it indicated whether a certain quintile benefited more than any other given the treatment. These concerns led to the examination of six hypotheses.

- 25. H_0 : There will be no difference between the treatment group and the control group mean scores on the measure of Success II and graduation.
- 26. H_O: There will be no interaction between treatment and measures.
- 27. H_0 : There will be no difference between quintiles and the measures of Success II and graduation.
- 28. H_O: There will be no interaction between quintiles and measures.

- 29. H_O: There will be no interaction between treatment and quintiles.
- 30. H_O: There will be no interaction between treatment, quintiles, and measures.

<u>Design</u> The result of the sorting and randomizing procedure was a 2 X 2 X 3 X 2 completely balanced design. The sample was drawn from all full-time students who completed five consecutive semesters of college. There were two treatment groups, two year-of-entry levels, three quintile ranges, and two dependent variables. The experimental design is illustrated in Table 4.5.

TABLE 4.5

EXPERIMENTAL DESIGN - FIVE SEMESTERS

| Indepe | endent Varia | bles | Dependent | Variables |
|-----------|--------------|----------|------------|------------|
| Treatment | Entry Year | Quintile | Success II | Graduation |
| | | I | | |
| | 1967 | II | | |
| Experi- | | III | | |
| mental | | I | | |
| | 1968 | 11 | | |
| | | III | | |
| | 1 | I | | |
| | 1967 | II | | |
| Control | | III | | |
| | | I | | |
| | 1968 | II | | |
| | | III | | |

A repeated measures analysis of variance was performed on the dependent variables. This analysis allowed for

considering all measure in a test for main effect and for treatment with measures interaction. The repeated measures analysis of variance was calculated by a computer program developed by Jennrich. The results will be discussed in Chapter V.

CHAPTER V

RESULTS

The results of the study are presented in this chapter. Each of the null hypotheses is presented along with the results of the test for statistical significance.

Separate data matrices were constructed for each of the five main areas of interest of the study. The data were analyzed using repeated measures analysis of variance. Where significant treatment by measures and/or quintile by measures interactions were found, appropriate post hoc analysis procedures were also used to make a closer inspection of the data.

The variable "year of entry" was used to gain precision in the analysis process and to achieve greater external validity. The findings related to this variable are discussed in a separate section entitled "Related Findings."

The variable "measures" is an artifact of the design and is neither a dependent nor independent variable itself.

It is not of interest in itself in this study and will be

discussed only where it forms an interaction effect with a variable of interest.

In all cases where applicable, the conservative F test was used. The conservative F test does not include degrees of freedom attributable to repeated measures. Since the degrees of freedom attributable to repeated measures are not used, a violation of the assumption related to the equality of the off diagonal elements of the repeated measures by repeated measures interaction matrix will have influenced the outcome.

Persistence

The first major area of interest was that of persistence. Here, the drop-out rates of the experimental and control group were compared. The overall research design and the cell means by treatment, year of entry, and quintile for each of the measures are presented in Table 5.1.

The results of the repeated measures analysis of variance are summarized in Table 5.2.

TABLE 5.1

CELL MEANS FOR EACH MEASURE OF PERSISTENCE USING TRANSFORMED SCORES*

| Indep | Independent Variables | es | Dependent Variables | /ariables |
|-----------|-----------------------|----------|---------------------|-------------------|
| Treatment | Entry Year | Quintile | Persistence I | Persistence II |
| | | Ι | 2.915 | 3.137 |
| | 1967 | II | 2.672 | 2.941 |
| Experi- | | III | 2.672 | 2.941 |
| mental | | I | 2.672 | 3.137 |
| | 1968 | II | 2.915 | 3.333 |
| | | III | 2.672 | 2.941 |
| | | Ι | 3.887 | 3.529 |
| | 1967 | II | 2.915 | 2.745 |
| Control | | III | 3.401 | 3.137 |
| | | I | 2.672 | 3.137 |
| | 1968 | II | 3.158 | 2.745 |
| | | III | 3.158 | 2.941 |

*See page 65 for explanation of the linear transformation.

TABLE 5.2

REPEATED MEASURES ANALYSIS OF VARIANCE TABLE
FOR TRANSFORMED SCORES*

Persistence

| Source of | Sum of | Degrees of | Mean | |
|---------------|-----------|------------|--------|---------|
| Variation | Squares | Freedom | Square | F |
| | _ | _ | _ | |
| Treatment (T) | 2.555 | 1 | 2.555 | 1.720 |
| Year of Entry | (Y) .829 | 1 | .829 | .558 |
| Quintile (Q) | 1.855 | 2 | .927 | .624 |
| TXY | 2.007 | 1 | 2.007 | 1.351 |
| ТXQ | 2.369 | 2 | 1.184 | .797 |
| Y X Q | 4.652 | 2 | 2.326 | 1.566 |
| TXYXQ | .751 | 2 | .375 | .252 |
| S: TYQ | 160.398 | 108 | 1.485 | |
| Measures (M) | .372 | 1 | .372 | .722 |
| TXM | 3.492 | 1 | 3.492 | 6.658** |
| Y X M | .432 | 1 | .432 | .839 |
| QXM | .426 | 2 | .212 | .413 |
| TXYXM | .023 | 1 | .023 | .044 |
| TXQXM | .305 | 2 | .152 | .296 |
| MXQXY | 1.001 | 2 | .500 | .971 |
| MXQXYX | .592 | 2 | .296 | .574 |
| S M: T Y Q | 55.614 | 108 | .514 | |
| POTAL | 2,237.612 | 239 | .994 | |

^{*} See page 65 for explanation of the linear transformation.

^{**} Significant at alpha = .05.

Hypothesis 1

There will be no difference between the experimental group (ECD) and the control group (Liberal Arts) on the dependent variables of Persistence I and Persistence II.

Persistence I is a measure of the drop-out rate at the end of the first year of college and Persistence II is a measure of the drop-out rate at the end of the second year of college. Each student that remained in school was coded one (1) and each student that dropped out was coded two (2). The group means were then computed.

Results The main effect of treatment was not significant at alpha = .05 (F = 2.555, d.f. 1,108). Therefore, there was no difference between groups, and the null hypothesis was rejected.

Hypothesis 2

There will be no interaction between the treatment and measures.

Results The treatment by measures interaction effect was significant at alpha = .05 (F = 6.658, d.f. 1,108). The interaction effect indicates that there was an effect due to particular combinations of the levels of treatment and

measures. The overall mean and the mean for each of the measures for each of the treatment levels is presented in Table 5.3.

TABLE 5.3

CELL MEANS FOR THE PERSISTENCE

TREATMENT BY MEASURES INTERACTION

USING TRANSFORMED SCORES*

| | Persistence I | Persistence II | Total |
|--------------|---------------|----------------|-------|
| Experimental | 2.753 | 3.071 | 2.912 |
| Control | 3.199 | 3.039 | 3.119 |
| Total | 2.976 | 3.055 | 3.016 |

*See page 65 for explanation of the linear transformation.

The graph in Figure 5.1 illustrates the interaction of treatment with measures. On this graph, the lower numerical score indicates the lower drop-out rate. The graph illustrates the point that the control group had a steady drop-out rate over two years while the experimental group had a lower drop-out rate the first year and a slightly higher drop-out rate at the end of the second year. In actual figures, 6.6 percent of the experimental group and 15.8 percent of the control group dropped out by the end of the first year. By the end of the second year, 28.3

percent of the experimental group and 27.5 percent of the control group had dropped out.

Using the Tukey Honestly Significant Difference (HSD)

post hoc analysis procedure, it can be concluded that the

experimental group first-year drop-out rate was significantly

lower than that of the control group. There was no significant difference for Persistence II.

Hypothesis 3

There will be no difference between quintiles on the measures of Persistence I and Persistence II.

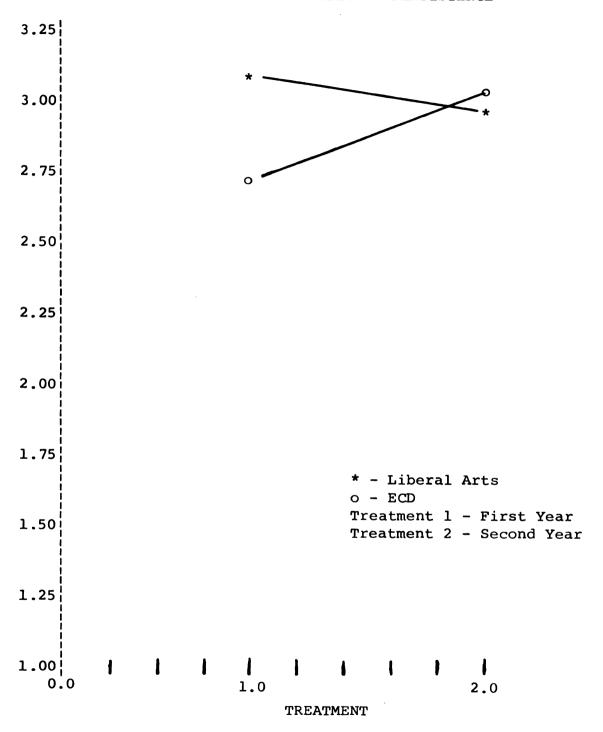
Results The main effect for quintiles was not significant at alpha = .05 (F = .624, d.f. 1,108), and the null hypothesis was not rejected.

Hypothesis 4

There will be no interaction between quintiles and measures.

Results The quintile by measures interaction effect was not significant at alpha = .05 (F = .413, d.f. 1,108) and the null hypothesis was not rejected.

FIGURE 5.1
TREATMENT BY MEASURES INTERACTION - PERSISTENCE



Hypothesis 5

There will be no interaction between treatment and quintiles.

Results The treatment by quintiles interaction was not significant at alpha = .05 (F = .797, d.f. 1,108), and the null hypothesis was not rejected.

Hypothesis 6

There will be no interaction between treatment, quintiles, and measures.

Results The treatment by quintile by measures interaction was not significant at alpha = .05 (F = .296, d.f. 1,108), and the null hypothesis was not rejected.

First Year

Because the ECD Program is a one-year program comparable to the Liberal Arts transfer program, it was of interest to compare the academic achievement of the students in the two programs at the end of the first year of college. The measures of academic achievement were credit hours bettempted; credit hours earned; grade point average; and access I. Since twelve credit hours is a full load of

study, earning two semesters' worth of credit at a grade point average of 2.00 or better will be considered successful. The research design and the cell means by treatment, year of entry and quintile for each of the measures is presented in Table 5.4

TABLE 5.4

CELL MEANS FOR EACH FIRST YEAR MEASURE
USING TRANSFORMED SCORES*

| Independ | lent Var | iables | Î | Dependent | Variables | |
|----------|----------|--------|-----------|-----------|-----------|---------|
| Treat- | Entry | Quin- | Credits | Credits | | Success |
| ment | Year | tile | Attempted | Earned | G.P.A. | I |
| | | I | 14.138 | 6.634 | 3.619 | 3.445 |
| | 1967 | II | 14.367 | 6.180 | 3.747 | 3.242 |
| Experi- | | III | 14.780 | 6.504 | 3.486 | 3.242 |
| mental | | I | 14.642 | 6.396 | 3.513 | 3.242 |
| { | 1968 | II | 14.688 | 6.331 | 3.509 | 3.242 |
| | | III | 14.642 | 6.569 | 3.836 | 3.647 |
| | | I | 12.806 | 4.927 | 2.532 | 2.229 |
| _ | 1967 | II | 12.944 | 5.035 | 2.877 | 2.837 |
| Control | | III | 13.449 | 5.705 | 3.499 | 3.242 |
|] | | I | 12.852 | 5.186 | 3.251 | 3.040 |
| | 1968 | II | 12.393 | 4.711 | 3.296 | 2.837 |
| | | III | 13.265 | 5.813 | 3.822 | 3.242 |

^{*}See page 65 for explanation of the linear transformation.

The results of the repeated measures analysis of variance are summarized in Table 5.5

TABLE 5.5

REPEATED MEASURES ANALYSIS OF VARIANCE
TABLE FOR TRANSFORMED SCORES*

First Year

| Source of | Sum of | Degrees of | Mean | |
|------------------|----------|------------|----------|------------|
| <u>Variation</u> | Squares | Freedom | Square | F |
| | 00 405 | • | 00 405 | 42 65044 |
| Treatment (T) | 99.495 | 1 | 99.495 | 43.659** |
| Year of Entry | - · | 1 | 1.304 | .572 |
| Quintile (Q) | 17.084 | 2 | 8.542 | 3.748** |
| TXY | .117 | 1 | .117 | .051 |
| ТХQ | 6.462 | 2 | 3.230 | 1.417 |
| YXQ | 1.279 | 2 | .639 | .280 |
| TXYXQ | 2.499 | 2 | 1.249 | .547 |
| S: TYQ | 246.122 | 108 | 2.278 | |
| Measures (M) | 8865.238 | 3 | 2955.079 | 5150.850** |
| TXY | 30.850 | 3 | 10.283 | 17.924** |
| YXM | 1.346 | 3 | .448 | .781 |
| QXM | 1.676 | 6 | .279 | .486 |
| TXYXM | 3.538 | 3 | 1.179 | 2.055 |
| TXQXM | 1.457 | 6 | .242 | .423 |
| YXQXM | .860 | 6 | .143 | .249 |
| MXQXYT | 3.226 | 6 | .537 | .937 |
| S M: T Y Q | 185.881 | 324 | .573 | |
| TOTAL | 9468.433 | 479 | 19.767 | |

^{*} See page 65 for explanation of linear transformation

^{**} Significant at alpha = .05.

^{***} Significant at alpha = .05 using conservative test.

Hypothesis 7

There will be no difference between the experimental group and the control group mean scores on the measures of credit hours attempted; credit hours earned; grade point average; and Success I.

Results The main effect for treatment was significant at alpha = .05 (F = 43.659, d.f. 1,108). There was a difference between groups, and the null hypothesis was rejected. Since the overall experimental group mean score (6.985) was larger than that of the control group (6.075), it suggests that the experimental group reached a higher level of academic performance than did the control group. However, before this can be concluded, the treatment by measures interaction must be examined.

Hypothesis 8

There will be no interaction between treatment and measures.

Results The treatment by measures interaction effect was significant at alpha = .05 (F = 17.924, d.f. 1,108), and the null hypothesis was rejected. The interaction effect indicates

that the treatment effect was not constant across the measures. The overall mean and the mean for each of the treatment levels is summarized in Table 5.6.

TABLE 5.6

CELL MEANS FOR FIRST YEAR

TREATMENT BY MEASURES INTERACTION

USING TRANSFORMED SCORES*

| | Credit Hours Attempted | Credit Hours Earned | G.P.A. | Success I | Total |
|--------------|------------------------------|---------------------------|--------|-----------|-------|
| Experimental | 14.543 | 6.436 | 3.618 | 3.343 | 6.985 |
| Control | 12.952 | 5.229 | 3.213 | 2.904 | 6.075 |
| Total | 13.747 | 5.833 | 3.416 | 3.124 | 6.530 |

*See page 65 for explanation of linear transformation.

Using the Tukey HSD <u>post hoc</u> analysis procedure, a significant difference was found for each comparison of the experimental and control group mean scores on a given measure. The experimental group (ECD) mean score was significantly higher than the control group (Liberal Arts) mean score on each of the measures of credit hours attempted, credit hours earned, grade point average, and Success I. The untransformed cell means for each of the first year measures was presented in Table 5.7.

TABLE 5.7
CELL MEANS FOR FIRST YEAR MEASURES

| | Credit Hours Attempted | Credit Hours Earned | G.P.A. | Success I |
|--------------|---------------------------|------------------------|--------|-----------|
| Experimental | 31.68 | 29.78 | 2.26 | 65* |
| Control | 28.21 | 24.20 | 2.01 | 43* |

*Percent who earned 24 or more credit hours with a G.P.A. of 2.00 or higher.

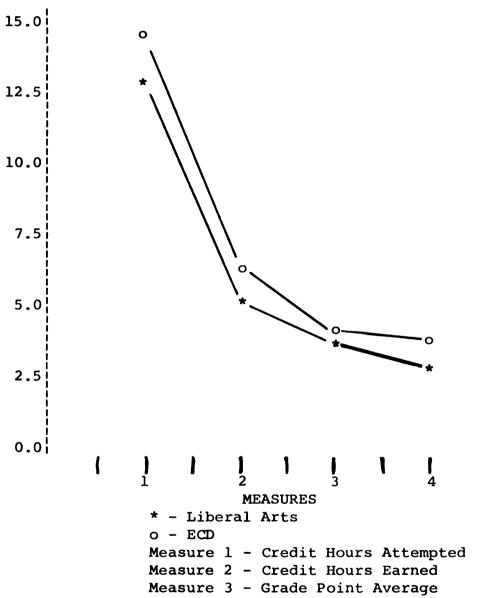
The treatment by measures interaction is illustrated in Figure 5.2. The interaction is ordinal in that the lines representing the two groups do not intersect on the graph. The interaction is reflected on the graph in that the lines are not equidistant. The groups are further apart on the measures of credit hours attempted and credit hours earned than they are on the measures of grade point average and Success I.

Hypothesis 9

There will be no difference between quintiles on the measures of credit hours attempted, credit hours earned, grade point average, and Success I.

Results The main effect for quintiles was significant at alpha = .05 (F = 3.748, d.f. 2,108), and null hypothesis was rejected.

FIGURE 5.2
TREATMENT BY MEASURES INTERACTION - FIRST YEAR



Measure 4 - Success I

Using the Tukey HSD procedure for post hoc analysis, no pair-wise comparison of the quintile means exceeded the HSD of .46. An examination of the means (Quintile I = 6.403, Quintile II = 6.390, Quintile III = 6.798) indicates that the students in Quintile III achieved at a higher rate than did the students in the other two quintiles.

Hypothesis 10

There will be no interaction between quintiles and measures.

Results The quintile by measures interaction was not significant at alpha = .05 (F = .486, d.f. 2,108), and the null hypothesis was not rejected.

Hypothesis 11

There will be no interaction between treatment and quintiles.

Results The treatment by quintiles interaction effect was not significant at alpha = .05 (F = 1.417, d.f. 2,108), and the null hypothesis was not rejected.

Hypothesis 12

There will be no interaction effect between treatment, quintiles, and measures.

Results The interaction effect between treatment, quintiles, and measures was not significant at alpha = .05 (F = .423, d.f. 2,108), and the null hypothesis was not rejected.

First-Second Year

In this section of the study, the primary concern was with the relative performance in the second year of college as compared to the first year in college. The measures used were credit hours attempted, credit hours earned, and grade point average. The overall research design and cell means by treatment, year of entry, quintile, and year of performance for each of the measures is presented in Table 5.8. The results of the repeated measures analysis of variance are summarized in Table 5.9.

Hypothesis 13

of performance and the second year of performance.

Results The main effect for year of performance was significant at alpha = .05 (F = 50.868, d.f. 1,108), and the null hypothesis was rejected. The converted mean scores for the first year of performance (5.183) was greater than that of the second year of performance (4.645), and it suggests

TABLE 5.8

CELL MEANS FOR EACH FIRST-SECOND YEAR MEASURE USING TRANSFORMED SCORES*

| Indepe | Independent Vari | ariables | | Deper | Dependent Variables | riables | | |
|-----------|------------------|----------|--------|--------|---------------------|---------|--------|-------|
| | | | 3 | Year 1 | | ζ. | Year 2 | |
| | Entry | | Credit | Credit | | Credit | Credit | |
| Treatment | Year | Quintile | Att. | Earned | GPA | Att. | Earned | GPA |
| | | Ι | 7.351 | 5.590 | 3.929 | 916.9 | 4.313 | 3.287 |
| | 1961 | II | 7.237 | 5.392 | 4.079 | 6.504 | 4.319 | 3.284 |
| Experi- | | III | 7.283 | 5.608 | 4.077 | 7.374 | 4.439 | 3.725 |
| mental | | I | 7.328 | 5.536 | 4.082 | 6.939 | 4.331 | 3.186 |
| | 1968 | II | 7.328 | 5.248 | 4.085 | 6.160 | 3.792 | 3.082 |
| | | III | 7.328 | 5.679 | 4.402 | 6.160 | 3,900 | 3,392 |
| | | I | 6.183 | 3.451 | 2.773 | 5.519 | 3.451 | 2.492 |
| | 1967 | II | 6.664 | 4.421 | 3.098 | 6.138 | 3.882 | 2.842 |
| Control | | III | 6,618 | 4.278 | 3.576 | 6.092 | 4.331 | 3.947 |
| | | Ι | 6.458 | 4.242 | 2.814 | 6.573 | 4.278 | 3.098 |
| | 1968 | II | 6.756 | 5,068 | 3,759 | 6.733 | 4,673 | 3.966 |
| | | III | 6.504 | 4.763 | 3.596 | 6.504 | 4.044 | 3.540 |

* See page 65 for explanation of linear transformation.

TABLE 5.9

RELATED MEASURES ANALYSIS OF VARIANCE TABLE
FOR TRANSFORMED SCORES*

First-Second Year

| Source of | Sum of | Degrees of | Mean | |
|----------------------------|------------------|------------|---------|------------|
| Variation | Squares | Freedom | Square | F |
| Treatment (T) | 53.213 | 1 | 53.213 | 22.163** |
| - | | 1 | 3.247 | 1.352 |
| $oldsymbol{Q}$ uintile (Q) | 10.550 | 2 | 5.275 | 2.197 |
| T X Y | 14.985 | 1 | 14.985 | 6.241** |
| T X Q | 17.129 | 2 | 8.564 | 3.567** |
| Y X Q | 6.338 | 2 | 3.169 | 1.320 |
| T XYXQ | 2.287 | 2 | 1.141 | .476 |
| S: TYQ | 25 9.2 97 | 108 | 2.401 | |
| Year of Per- | | | | |
| £ormance (P) | 51.987 | 1 | 51.987 | 50.868** |
| T ≫ P | 25.337 | 1 | 25.337 | 24.792** |
| Y 🔀 P | .504 | 1 | .504 | .493 |
| Q >< P | 1.200 | 2 | .600 | .587 |
| T 🔀 Y X P | 4.264 | 1 | 4.264 | 4.172** |
| T 🔀 Q X P | .023 | 2 | .011 | .011 |
| Y 🔀 Q X P | 4.409 | 2 | 2.204 | 2.157 |
| T 🔀 Y X Q X P | .089 | 2 | .044 | .043 |
| S P = T Y Q | 110.441 | 108 | 1.022 | |
| Measures (M) | 1269.817 | 2 | 634.908 | 703.110*** |
| T X M | 1.256 | 2 | .628 | .695 |
| Y X M | .328 | 2 | .163 | .181 |
| $Q \times M$ | 5.467 | 4 | 1.366 | 1.513 |
| TXYXM | 1.110 | 2 | .555 | .615 |
| MXQXT | 1.071 | 4 | .267 | .296 |
| M X Q X Y | 1.337 | 4 | .334 | .370 |
| T X Y X Q X M | 2.827 | 4 | .706 | .782 |
| SM: TYQ | 195.205 | 216 | .903 | |
| РХМ | 5.986 | 2 | 2.992 | 7.613*** |
| T X P X M Y X P X W | 3.788 | 2 | 1.893 | 4.817*** |
| X M | .615 | 2 | .307 | .781 |
| Q X P X M | .999 | 4 | .249 | .634 |
| T X Y X P X M | 2.010 | 2 | 1.005 | 2.557 |
| V TA APAM | 1.403 | 4 | .350 | .891 |
| m - x - x P x M | .169 | 4 | .042 | .107 |
| A Q X P | | 4 | .323 | .822 |
| 'I' Y () | 84.931 | 216 | .393 | |
| TOTAL | 2144.911 | 719 | 2.983 | |

*See page 65 for explanation of linear transformation.

^{**}Significant at alpha = .05.

^{***}Significant at alpha = .05 using conservative F test.

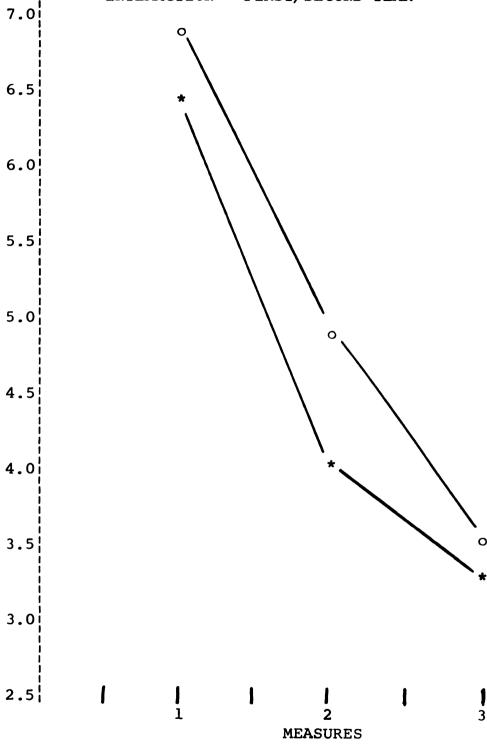
that the students did better during their first year of study than they did during their second year of study. However, before this can be concluded, the treatment by measures interaction must be examined.

Hypothesis 14

There will be no interaction between year of performance and measures.

Results The interaction between year of performance and measures was significant at alpha = .05 (F = 7.613, d.f. 1,108), and the null hypothesis was rejected. The interaction effect indicated that there was an effect due to particular levels of the years of performance and measures. The overall mean and the mean for each of the measures for each of the years of performance levels is presented in Table 5.10. The graph in Figure 5.3 illustrates the interaction of year of performance and measures. The interaction is ordinal in that the lines representing the two years of study do not intersect on the graph. The interaction is reflected on the graph in that the lines are not equidistant. It is on the measure of credit hours earned that the greatest difference is found. The difference in credit hours attempted and grade point average is not as

FIGURE 5.3
YEAR OF PERFORMANCE BY MEASURES
INTERACTION - FIRST/SECOND YEAR



* - Liberal Arts

o - ECD

Measure 1 - Credit Hours Attempted

Measure 2 - Credit Hours Earned

Measure 3 - Grade Point Average

TABLE 5.10

CELL MEANS FOR YEAR OF PERFORMANCE BY MEASURES INTERACTION USING TRANSFORMED SCORES*

| | Credits Attempted | Credits Earned | G.P.A. | Total |
|----------------------------|----------------------|-------------------|--------|-------|
| First Year of Performance | 6.920 | 4.940 | 3.689 | 5.183 |
| Second Year of Performance | 6.468 | 4.149 | 3.320 | 4.645 |
| Total | 6.694 | 4.544 | 3.505 | 4.914 |

^{*}See page 65 for explanation of linear transformation.

great as it is for credit hours earned, although the secondyear performance is below that of the first year on all three measures.

Hypothesis 15

There will be no interaction between treatment and year of performance.

Results The interaction between treatment and year of performance was significant at alpha = .05 (F = 24.792, d.f. 1,108), and the null hypothesis was rejected. The overall mean and the mean for each of the treatment levels for each year of performance level is presented in Table 5.11.

TABLE 5.11

CELL MEANS FOR TREATMENT BY YEAR OF PERFORMANCE INTERACTION USING TRANSFORMED SCORES*

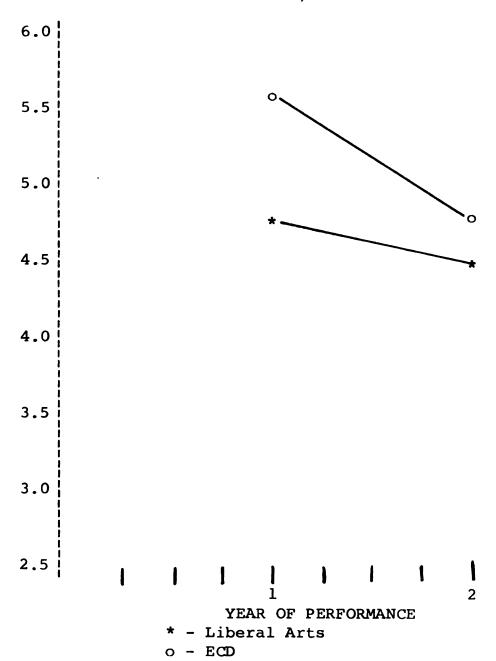
| | First Year of Performance | Second Year of Performance | Total |
|--------------|------------------------------|-------------------------------|-------|
| Experimental | 5.642 | 4.730 | 5.186 |
| Control | 4.723 | 4.561 | 4.642 |
| Total | 5.181 | 4.645 | 4.914 |

*See page 65 for explanation of linear transformation.

The graph in Figure 5.4 illustrates the interaction of treatment levels with year-of-performance levels. The graph illustrates the point that the experimental group's second year performance was much lower than its first year performance. The control group performance was only slightly lower the second year.

Using the Tukey HSD procedure for <u>post hoc</u> analysis, it can be concluded that the experimental group first year of performance mean score was significantly higher than was the control group mean score. There was no difference between the two groups for the second year of performance.

FIGURE 5.4 TREATMENT BY YEAR OF PERFORMANCE INTERACTION - FIRST/SECOND YEAR



Hypothesis 16

There will be no interaction between treatment, year of performance, and measures.

Results The interaction between treatment, year of performance, and measures was significant at alpha = .05

(F = 4.817, d.f. 1,108), and the null hypothesis was rejected.

Table 5.12 presents the overall mean and the means for each level of treatment, year of performance, and measures.

TABLE 5.12

CELL MEANS FOR TREATMENT BY YEAR OF PERFORMANCE BY MEASURES INTERACTION USING TRANSFORMED SCORES*

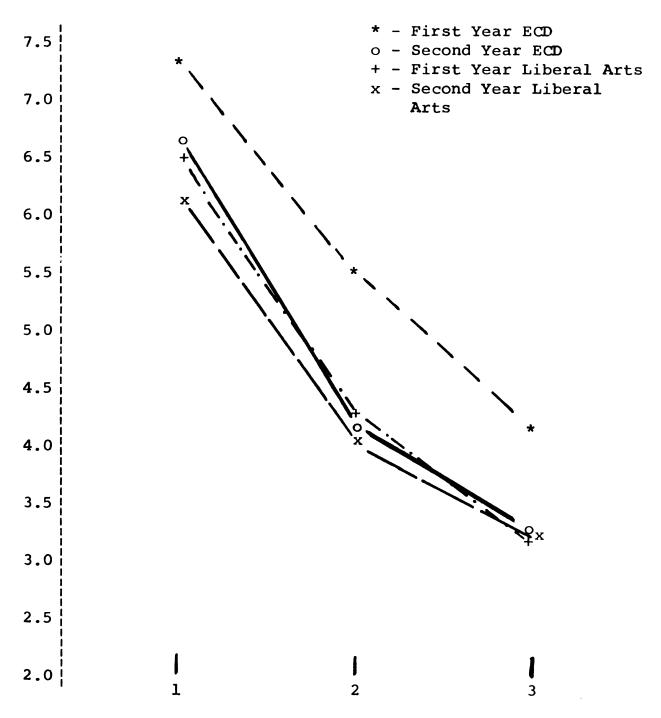
| | • | | | | |
|---------|----------------|-----------|---------|--------|-------|
| | | Credits | Credits | | |
| | | Attempted | Earned | G.P.A. | Total |
| | First Year of | | | | |
| | Performance | 7.309 | 5.509 | 4.109 | 5.642 |
| Experi- | Second Year of | | | | |
| mental | Performance | 6.676 | 4,188 | 3.326 | 4.730 |
| | First Year of | | | | |
| | Performance | 6.531 | 4.370 | 3.269 | 4.723 |
| | Second Year of | | | | |
| Control | Performance | 6.260 | 4.110 | 3.314 | 4.561 |
| | | | | | |
| Total | | 6.694 | 4.544 | 3.505 | 4.914 |

*See page 65 for explanation of linear transformation.

The graph in Figure 5.5 illustrates the interaction between treatment, year of performance, and measures. The graph illustrates two points. First, the difference between

FIGURE 5.5

TREATMENT BY YEAR OF PERFORMANCE BY MEASURES INTERACTION - FIRST/SECOND YEAR



MEASURES

Measure 1 - Credit Hours Attempted Measure 2 - Credit Hours Earned Measure 3 - Grade Point Average

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the first year of performance and the second year of performance was much greater for the treatment group than it was for the experimental group. Second, the experimental group score on each of the measures was higher the first year than it was the second year but this was not always the case with the control group. The control group grade point average was slightly higher at the end of the second year than it was at the end of the first year.

Hypothesis 17

There will be no interaction between treatment, quintile, and year of performance.

Results The interaction effect between treatment, quintile, and year of performance was not significant at alpha = .05 (F = .011, d.f. 1,108), and the null hypothesis was not rejected.

Hypothesis 18

There will be no interaction between treatment, year of performance, quintile, and measures.

Results The interaction effect between treatment, year of performance, quintile and measures was not significant at

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alpha = .05 (F = .891, d.f. 2,108), and the null hypothesis
was not rejected.

Two Years

Traditionally, community college study is thought of as a two-year sequence. While this is not always true, it is of interest to examine the group results after two consecutive years of study have passed. The experimental group has spent one year in the ECD Program and one year in the Liberal Arts Program. The control group has spent two years in the Liberal Arts Program. The measures were cumulative credit hours attempted, cumulative credit hours earned, cumulative grade point average, and Success II (earning 48 or more credit hours at a grade point average of 2.00 or higher), and graduation. The overall research design and the cell means by treatment, year of entry, quintile, and measures is presented in Table 5.13. The results of the repeated measures analysis of variance are summarized in Table 5.14.

TABLE 5.13

CELL MEANS FOR EACH MEASURE USING TRANSFORMED SCORES*

Two Year

| | Independent | Variables | | De | Dependent Variables | ariables | |
|-----------|-------------|-----------|--------|--------|---------------------|----------|-------|
| | | | cr. | Cr. | | ssecong | |
| Treatment | Entry Year | Quintile | Att. | Earned | GPA | II | Grad. |
| | | I | 6.895 | 6.331 | 3.977 | 3,156 | 3.233 |
| | 1967 | II | 6.863 | 6.841 | 4.378 | 3,366 | 3.233 |
| Experi- | | III | 10.169 | 6.927 | 4.411 | 3.787 | 3.821 |
| mental | | 1 | 10.233 | 6.684 | 4.403 | 3.787 | 2.939 |
| | 1968 | II | 9.638 | 6.744 | 4.678 | 3,366 | 4.115 |
| | | III | 9.638 | 6.635 | 4.779 | 3,366 | 3.527 |
| | | I | 8.093 | 3.670 | 2.557 | 2,104 | 2.939 |
| | 1967 | II | 9.220 | 6.197 | 4.004 | 3.156 | 2.939 |
| Control | | III | 9.107 | 6.331 | 4.561 | 2.946 | 3.821 |
| | | 1 | 9.123 | 5.492 | 3.692 | 2.735 | 2.939 |
| | 1968 | II | 9.107 | 6.331 | 4.561 | 2.946 | 3.821 |
| | | III | 9.348 | 5.821 | 3.651 | 2.735 | 3.233 |

*See page 65 for explanation of linear transformation.

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Y X M
Q X M
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Y X Q X M
T X Y X Q
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TOTAL

TABLE 5.14

REPEATED MEASURES ANALYSIS OF VARIANCE TABLE
FOR TRANSFORMED SCORES*

Two Years

| Source of | Sum of | Degrees of | Mean | |
|---------------|-----------|------------|---------|------------|
| | Squares | Freedom | Square | F |
| | | | | |
| Treatment (T) | 67.346 | 1 | 67.346 | 25.090** |
| Year of Entry | (Y) 5.351 | 1 | 5.351 | 1.993 |
| Quintile (Q) | 39.600 | 2 | 19.799 | 7.376** |
| T X Y | 1.911 | 1 | 1.911 | .711 |
| T X Q | 17.016 | 2 | 8.508 | 3.169** |
| Y X Q | 21.756 | 2 | 10.878 | 4.052** |
| TXYXQ | 3.942 | 2 | 1.971 | .737 |
| S: TYQ | 289.886 | 108 | 2.684 | |
| Measure (M) | 3369.184 | 4 | 842.296 | 1456.747** |
| TXM | 9.882 | 4 | 2.470 | 4.267** |
| Y X M | 1.170 | 4 | .292 | .505 |
| QXM | 10.572 | 8 | 1.321 | 2.282 |
| TXYXM | 4.285 | 4 | 1.071 | 1.850 |
| TXQXM | 10.407 | 8 | 1.300 | 2.246 |
| YXQXM | 10.925 | 8 | 1.365 | 2.358 |
| MXQXYX | 5.535 | 8 | .691 | 1.195 |
| S M: T Y Q | 250.124 | 432 | .578 | |
| TOTAL | 4118.893 | 599 | 6.876 | |

^{*}See page 65 for explanation of linear transformation.

^{**}Significant at alpha = .05.

^{***}Significant at alpha = .05 conservative test.

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Hypothesis 19

There will be no difference between the experimental group and the control group mean scores on the measures of credit hours attempted, credit hours earned, grade point average, Success II, and graduation.

Results The main effect for treatment was significant at alpha = .05 (F = 25.090, d.f. 1,108), and the null hypothesis is rejected. Since the experimental group mean score (5.597) is larger than the control group mean score (4.927), it appears that the experimental group performed better over the two-year period than did the control group.

Hypothesis 20

There will be no interaction between treatment and measures.

Results The interaction between treatment and measures was significant at alpha = .05 (F = 4.267, d.f. 1,108), and the null hypothesis was rejected. The overall means and the means for each level of treatment for each measure was presented in Table 5.15.

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TABLE 5.15

CELL MEANS FOR TWO-YEAR TREATMENT BY MEASURES INTERACTION USING TRANSFORMED SCORES*

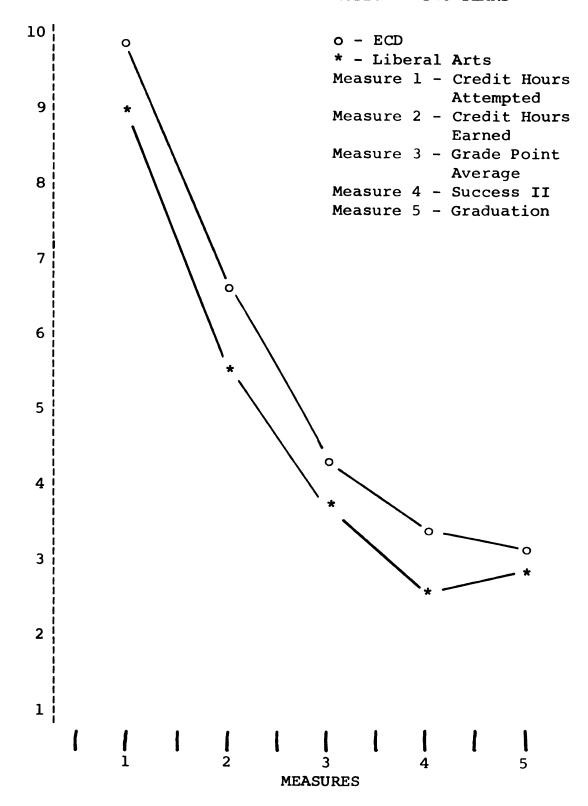
| | Credits Attempted | Credits Earned | G.P.A. | Success II | Grad. | Total |
|-------------------|----------------------|-------------------|--------|---------------|-------|-------|
| Experi- mental | 9.906 | 6.694 | 4.437 | 3.471 | 3.478 | 5.597 |
| Control | 9.069 | 5.681 | 3.812 | 2.840 | 3.233 | 4.927 |
| Total | 9.488 | 6.187 | 4.124 | 3.156 | 3.356 | 5.262 |

*See page 65 for explanation of linear transformation.

The graph in Figure 5.6 illustrates the interaction of treatment with measures. The interaction is ordinal in that the lines representing the two groups do not intersect on the graph. The interaction is reflected on the graph in that the lines are not equidistant. The groups are most different on the measures of cumulative credit hours attempted and cumulative credit hours earned. The differences are less great on the measures of cumulative grade point average and Success II and least different on the measure of graduation.

Using the Tukey HSD post hoc analysis procedure, a significant difference was found for each comparison of the treatment and control group mean scores on a given measure. The experimental group (ECD) mean score was significantly

FIGURE 5.6
TREATMENT BY MEASURES INTERACTION - TWO YEARS



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higher than the control group (Liberal Arts) mean score on each of the measures of cumulative credit hours attempted, cumulative credit hours earned, cumulative grade point average, Success II, and graduation. The actual means for each level of treatment for each measure is presented in Table 5.16.

TABLE 5.16

CELL MEANS FOR TWO-YEAR MEASURES

| | Credit Hours Attempted | Credit Hour Earned | G.P.A. | Success II | Gradu- ation |
|-------------------|------------------------|-----------------------|--------|---------------|-----------------|
| Experi- mental | 61.56 | 54.91 | 2.28 | 65* | 18** |
| Control | 56.36 | 46.58 | 1.96 | 35* | 10** |

^{*}Percent who earned 48 or more credit hours at a G.P.A. of 2.00 or higher.

Hypothesis 21

There will be no difference between quintiles on the measures of credit hours attempted, credit hours earned, grade point average, Success II, and graduation.

Results The main effect for quintiles was significant at alpha = .05 (F = 7.376, d.f. 2,108) and the null hypothesis was rejected.

^{**}Percent who earned 62 or more credit hours at a G.P.A. of 2.00 or higher.

Using the Tukey HSD procedure for <u>post hoc</u> analysis, it can be concluded that Quintile I (4.899) was significantly lower than were Quintile II (5.457) and Quintile III (5.431).

Hypothesis 22

There will be no interaction between quintiles and measures.

Results The interaction effect between quintiles and measures was not significant at alpha = .05 (F = 2.282, d.f. 2,108), and the null hypothesis was not rejected.

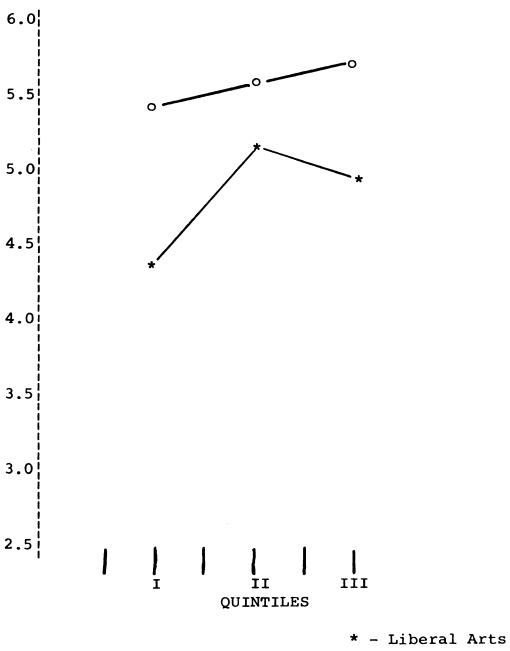
Hypothesis 23

There will be no interaction between treatment and quintiles.

Results The interaction effect between treatment and quintiles was significant at alpha = .05 (F = 3.169, d.f. 2,108), and the null hypothesis was rejected. The overall mean and the mean for each treatment level for each quintile level is presented in Table 5.17. The graph in Figure 5.7 illustrates the interaction between treatment and quintiles.

Using the Tukey HSD procedure for <u>post hoc</u> analysis, it can be concluded that Quintile I and Quintile III of the treatment group are significantly higher than their experimental group counterparts. The biggest difference is between

FIGURE 5.7
TREATMENT BY QUINTILE INTERACTION - TWO YEARS



o - ECD

the treatment group Quintile I and the experimental group Quintile I.

TABLE 5.17

CELL MEANS FOR TWO-YEAR TREATMENT BY QUINTILE INTERACTION USING TRANSFORMED SCORES*

| | Quintile I | Quintile II | Quintile III | Total |
|-------------------|------------|-------------|--------------|-------|
| Experi- mental | 5.464 | 5.622 | 5.706 | 5.597 |
| Control | 4.335 | 5.291 | 5.156 | 4.927 |
| Total | 4.899 | 5.457 | 5.431 | 5.262 |

^{*}See page 65 for explanation of linear transformation.

Hypothesis 24

There will be no interaction between treatment, quintiles, and measures.

Results The interaction effect between treatment, quintiles, and measures was not significant at alpha = .05 (F = 2.246, d.f. 2,108), and the null hypothesis was not rejected.

Fifth Semester

Because many students do not complete their course of study at a community college in two years, it is of interest to see how their academic performance on the

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measures of Success II and graduation is altered by an "extra" or fifth semester. The overall research design and the cell means by treatment, year of entry, quintile, and measures are presented in Table 5.18. The results of the repeated measures analysis of variance are summarized in Table 5.19.

Hypothesis 25

There will be no difference between the treatment and the control group mean scores on the measures of Success II and graduation.

Results The main effect for treatment was not significant at alpha = .05 (F = .227, d.f. 1,36), and the null hypothesis was not rejected.

Hypothesis 26

There will be no interaction between treatment and measures.

Results The interaction effect between treatment and measures was not significant at alpha = .05 (F = 1.991, d.f. 1,36), and the null hypothesis was not rejected.

TABLE 5.18

CELL MEANS FOR EACH MEASURE USING TRANSFORMED SCORES*

Fifth Semester

| Inde | ependent Variables | ables | Dependent Variables | Variables |
|-----------|--------------------|----------|---------------------|------------|
| Treatment | Entry Year | Quintile | Success II | Graduation |
| | | I | 2,089 | 2.191 |
| | 1967 | II | 2.611 | 2.739 |
| Experi- | | III | 3,133 | 2.739 |
| mental | | Ι | 3.656 | 3,834 |
| | 1968 | II | 3,133 | 2,739 |
| | | III | 3,656 | 2,739 |
| | | I | 2.089 | 2,191 |
| | 1967 | II | 2.611 | 2,739 |
| Control | | III | 2.611 | 2,739 |
| | | H | 3,133 | 2,739 |
| | 1968 | II | 2,611 | 2,739 |
| | | III | 3,656 | 3.834 |

*See page 65 for explanation of linear transformation.

TABLE 5.19

REPEATED MEASURES ANALYSIS OF VARIANCE TABLE
FOR TRANSFORMED SCORES*

Fifth Semesters

| Source of | Sum of | Degrees of | Mean | |
|-------------------|---------|------------|--------|-------------|
| Variance | Squares | Freedom | Square | F |
| | | | | |
| Treatment (T) | .409 | 1 | .409 | .227 |
| Year of Entry (Y) | 10.632 | 1 | 10.632 | 5.923** |
| Quintiles (Q) | 3.380 | 2 | 1.690 | .941 |
| TXY | .045 | 1 | .045 | .025 |
| T X Q | 1.200 | 2 | .600 | .334 |
| Y X Q | 4.580 | 2 | 2.289 | 1.275 |
| TXYXQ | 2.708 | 2 | 1.354 | .754 |
| S: TYQ | 64.611 | 36 | 1.794 | |
| Measures (M) | .177 | 1 | .177 | .859 |
| T X M | .409 | 1 | .409 | 1.991 |
| Y X M | .333 | 1 | .333 | 1.620 |
| QXM | .329 | 2 | .164 | .800 |
| TXYXM | .045 | 1 | .045 | .221 |
| TXQXM | 1.200 | 2 | .600 | 2.920 |
| YXQXM | .003 | 2 | .001 | .006 |
| TXYXQXM | .420 | 2 | .209 | 1.020 |
| S M: T Y Q | 7.397 | 36 | .205 | |
| TOTAL | 97.878 | 95 | 1.030 | |

^{*}See page 65 for explanation of linear transformation. **Significant at alpha = .05.

Hypothesis 27

There will be no difference between quintiles and the measures of Success II and graduation.

Results The main effect for quintiles was not significant at alpha = .05 (F = .941, d.f. 2,36), and the null hypothesis was not rejected.

Hypothesis 28

There will be no interaction between quintiles and measures.

Results The interaction effect between quintiles and measures was not significant at alpha = .05 (F = .800, d.f. 2,36), and the null hypothesis was not rejected.

Hypothesis 29

There will be no interaction between treatment and quintiles.

Results The interaction effect for treatment by quintiles was not significant at alpha = .05 (F = .334, d.f. 2,36), and the null hypothesis was not rejected.

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Hypothesis 30

There will be no interaction between treatment, quintiles, and measures.

Results The interaction effect between treatment, quintiles, and measures was not significant at alpha = .05 (F - 2.920, d.f. 2,36), and the null hypothesis was not rejected.

Related Findings

The variable year of entry was found as a significant main effect in only one of the five sections of the study.

In the Fifth Semester analysis, year of entry was significant at alpha = .05 (F = 5.923, d.f. 1,36). Those students who entered in 1968 did better than did those who entered in 1967 on the measures of Success II and graduation.

In the First/Second Year part of the study, a significant (alpha = .05) treatment by year of entry interaction was found (F = 6.241, d.f. 1,108). The cell means are presented in Table 5.20. It should be noted that the first year of entry students (1967) did slightly better than the second year of entry students (1968) for the experimental group while the second year of entry students (1968) did significantly better than the first year of entry students (1967) for the control group.

TABLE 5.20

CELL MEANS FOR FIRST/SECOND YEAR TREATMENT BY YEAR OF ENTRY INTERACTION USING TRANSFORMED SCORES*

| | Year of Entry (1967) | Year of Entry (1968) | |
|--------------|-------------------------|-------------------------|-------|
| Experimental | 5.263 | 5.109 | 5.186 |
| Control | 4.431 | 4.854 | 4.642 |
| | 4.847 | 4.981 | 4.914 |

^{*}See page 65 for explanation of linear transformation.

There was also a significant (alpha = .05) year of entry by quintile interaction for the Two Year part of the study (F = 4.052, d.f. 2,108). The cell means are presented in Table 5.21.

TABLE 5.21

CELL MEANS FOR TWO YEAR

QUINTILE BY YEAR OF ENTRY INTERACTION

USING TRANSFORMED SCORES*

| | Ouintile I | Ouintile II | Ouintile III | |
|-------------------------|------------|-------------|--------------|-------|
| Year of Entry (1967) | 4.596 | 5.320 | 5.588 | 5.168 |
| Year of Entry (1968) | 5.203 | 5.593 | 5.274 | 5.357 |
| | 4.899 | 5.457 | 5.431 | 5.262 |

*See page for explanation of linear transformation.

There are two factors that should be noted. First, for the 1967 year of entry, the level of performance is progressively higher for the three Quintiles, however, this is not true for the 1968 year of entry. Second, the level of performance is much more consistent across the Quintiles for the 1968 year of entry.

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CHAPTER VI

SUMMARY AND CONCLUSIONS

This chapter contains a summary of the purpose of the study, the problem, the program, the design, a discussion of the findings, and implications for future research.

The Purpose

The purpose of this study was to evaluate the academic performance of students enrolled in the Educational and Cultural Development (ECD) Program at Macomb County

Community College (MCCC). The program consisted of a comprehensive general education curriculum designed to serve the student who scored at the 60th percentile or lower on the American College Testing Program Aptitude Test Composite

(ACT-C) score (national two-year college norms). The study was focused on comparing the academic performance of students in the ECD Program to the academic performance of similar students enrolled in the Liberal Arts Program at MCCC.

Students from the Liberal Arts Program were selected as the

comparison group because they were the most similar group on campus.

The Problem

Previous research at MCCC had indicated that the student who expressed a desire to take a transfer program but scored below the 60th percentile (ACT-C) was most likely to drop out without completing any specific course of study.

This local finding was in line with Burton R. Clark's (The Open Door College: A Case Study) recognition that a significant number of community college students entered with transfer intentions but failed to either transfer to a four-year institution or to complete a terminal curriculum at a community college. William Moore, Jr. (Against the Odds) also makes the point that the community colleges are not adequately meeting the needs of the so-called marginal students.

The general philosophy of community college education is that each student should be allowed to progress as far as his interests and abilities allow. The trend has been to admit any and all adult individuals who believe that they may benefit from attendance at a community college. However, this "open-door" admission policy is tenable only if the

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students achieve, or at least have an honest chance to achieve, their educational goals. John E. Roueche (Salvage, Redirection or Custody?) examined the plight of the type of student in question and reported that the community college will be called upon to assume increased responsibility for remedial functions in the process of higher education. He also stated that existing programs are not adequate to the task and new approaches must be developed.

The Program

The response to this problem at MCCC was to initiate the ECD Program in the Fall of 1965. The study was designed as an experimental program in general education for students who scored at the 60th percentile or lower on the ACT-C. The ECD Program was intended to provide a complete first-year college experience in a more personalized setting than is usually found at a large community college.

The basic format for the program was centered on a core of general education courses. These courses were Communications, Humanities, Natural Science, and Social Science. However, the emphasis in the program was upon the learner and not upon a fixed course content. The courses could be applied to a number of options once the student

completed the program. The options included to work toward an Associate of Arts degree at MCCC, transferring the credits to a senior institution, or entering a vocational or career program at MCCC. This flexibility permitted a student to change his program of study without suffering a loss of time or credit that is frequently common when students change from one curricular program to another.

One special feature of the program was block scheduling. When the students registered, they were organized into units of 20, and these 20 students functioned as a unit for the semester. They attended all of their classes together either as a single block or in combination with other blocks. The class day was also organized into a package so that the instructors could vary the schedule of classes on a temporary basis to accommodate special projects or presentations.

Another feature of the program was team teaching. A team consisted of one instructor from each of the four instructional areas—communications, humanities, natural science, and social science. Each team instructed six blocks (120 students), and together the four instructors and the six blocks of students formed a complete entity. This team teaching arrangement allowed the instructors to work cooperatively on assignments as well as to integrate material for joint assignments.

Other features of the program, include instructors that were selected especially for the Program because of their interest in the Program, their academic qualification and preparation, and a desire to be involved in a student-centered teaching endeavor.

The instructors and the program are evaluated by the students each semester in an attempt to get feedback from the students to improve the Program.

A special counselor is readily available to the students to provide counseling and guidance in academic and non-academic matters. Group and individual counseling are provided.

The Program has administrative autonomy in that it has a full-time Director and the faculty is assigned to the program on a full-time basis. The faculty does not divide its time and interests between divisions and the Program, but is free to concentrate on the ECD Program.

The Design

The purpose of this study was to evaluate the academic performance of students enrolled in the Educational and Cultural Development Program. The academic performance

of the students in the ECD Program was compared to the academic performance of similar students in the Liberal Arts Program. The evaluation was made in five separate parts.

Persistence

In the first section, the drop-out rates of the experimental and control groups were compared. The measures were Persistence I, a measure of the drop-out rate at the end of the first year of college, and Persistence II, a measure of the drop-out rate at the end of two years of college at MCCC. The sample was randomly drawn from all full-time students who entered either the ECD or the Liberal Arts Programs.

First Year

In the second section, the academic performance of the students in the ECD Program was compared to the academic performance of students in the Liberal Arts Program at the end of one year. This was important because the ECD Program was intended to be only a one-year experience, and the students moved on to the other programs for their second year if they remained in college. The measures were credit hours attempted; credit hours earned; grade point average;

and Success I (earning 24 or more credit hours at a grade point average of 2.00 or higher during the first year of college). The sample was randomly drawn from all full-time students in either the ECD or the Liberal Arts Programs who completed the first year of college.

First-Second Year

The third section contained a comparison of academic performance during the first year of college with academic performance during the second year of college. This was of particular importance for the ECD group, because they had to make a transition from the ECD Program to the Liberal Arts Program. The measures were first-year credit hours attempted, first-year credit hours earned, first-year grade point average, second-year credit hours earned, and second-year grade point average. The sample was randomly selected from all full-time students who completed two years of college at MCCC.

Two Years

The fourth section compared the cumulative academic performance of students in the ECD Program with the cumulative academic performance of students in the Liberal Arts Program

at the end of two consecutive years of college. The measures of academic performance at the end of two years were cumulative credit hours earned, cumulative credit hours attempted, cumulative grade point average, Success II (earning 48 or more credit hours at a grade point average of 2.00 or higher), and graduation (earning 62 or more credit hours at a grade point average of 2.00 or higher). The sample was randomly selected from all full-time students from both groups who completed two years of college at MCCC.

Five Semesters

The fifth section compared the academic achievement of students in the ECD Program to students in the Liberal Arts Program at the end of five semesters. It was of interest to see what happened if the students extended their stay at MCCC for an "extra" semester. The measures used were Success II and graduation. The sample was randomly drawn from all full-time students who completed the fifth semester.

Analysis Procedure

A repeated measures analysis of variance was used to analyze the data and to test the hypotheses.

Discussion of the Findings

Persistence

One of the objectives of the ECD Program was to "increase the duration of the students' involvement in college." If the performance of the control group is taken as the norm, then the ECD Program was successful in meeting this objective. The ECD students had a significantly lower drop-out level than did the Liberal Arts students at the end of the first year of college. Only 6.6 percent of the ECD students dropped out during the first year as compared to 15.8 percent of the Liberal Arts students who dropped out during the same period. However, by the end of two years, there was no real difference between the groups.

Twenty-eight percent of the ECD group dropped out by the end of the second year and twenty-seven percent had dropped out of the Liberal Arts group.

Several features of the ECD Program were especially built into the design of the program to increase the duration of the students' stay in college. While these specific features were not tested by this study, they may have been factors related to the higher level of persistence reached by the students in the ECD Program.

One of the features built into the Program to encourage the students to persist in college was block scheduling. This was an attempt to help the students to get to know their fellow students and teachers quickly and easily. If the students were subjected to peer group influences and saw college as a central part of their lives, they may have been less likely to drop-out.

Another feature built into the Program to promote persistence in college was an emphasis on individual and group counseling. Students were encouraged to stay in college, at least until the end of the school year, when they were on the verge of dropping out.

The concept of a general education curriculum based upon student interest and need rather than a predetermined and inflexible body of knowledge may have held the interest of some students and caused them to remain in school.

A personal interest in each individual student, demonstrated by the faculty team, may have encouraged some students to stay in college.

Another factor may have been the inclusion of "extracurricular" activities as a regular part of the Program. The field trips, films, plays, and social activities may have been responsible for maintaining high student interest in the Program.

Even though these factors cannot be linked directly to the higher level of persistence reached by the ECD group, they are all probable contributing factors.

First Year

It was also an objective of the ECD Program to "improve students' chances of succeeding academically."

Using the control group as the norm again, the ECD Program was successful in improving the students' chances of academic success. The ECD students attempted more credit hours, earned more credit hours, earned higher grades, and reached the level of Success I more frequently than did the Liberal Arts students during the first year of college. The ECD group achieved at significantly higher levels on each of these measures than did the Liberal Arts group.

Perhaps the most important successes here are that the ECD students earned 5.58 more credit hours during their first year of college and that 65 percent of them were successful (earning 24 or more credit hours at a G.P.A. of 2.00 or higher) while only 43 percent of the Liberal Arts students were successful by these criteria. The difference in credits earned may be the most important because it is almost the equivalent of one and one-half four credit hour classes or two three credit hour classes.

The design of the ECD Program included several concepts that were intended to facilitate the higher levels of academic success. One of these concepts was that of a general education curriculum geared to the needs and interests of the students. This may have prompted greater interest and involvement on the part of the students and led to the increased academic success.

Another concept that may have facilitated the greater academic success was that of team teaching. The four instructors functioning as a unit may have helped students to see the relationships between the various fields of knowledge and thus reinforced each other's teaching.

The emphasis placed on the development of reading, writing, speaking, and study skills was also intended to help the students to succeed academically. These skills were stressed along with the presentation of subject matter content to be learned.

The block scheduling concept was intended to increase the number of credit hours attempted and credit hours earned. Each student in the ECD Program began the semester with a load of sixteen credit hours. The students in the lowest Quintile (ACT-C score of 20 or below) in the Liberal Arts Program may have been encouraged by a counselor to take a

lesser course load (twelve to fourteen credit hours) during their first year of college.

If the ECD students perceived their classes as a unit as a result of the block scheduling, they might have been less inclined to drop one or two of their classes than would a Liberal Arts student who did not see any relationship between the classes. This may have accounted for the greater number of credit hours earned by the ECD students.

The higher grades earned by the ECD students may have been the result of the emphasis placed on skills development in the program as well as the team teaching and the curriculum based upon student interest and need.

The finding that the ECD students achieved the level of Success I in significantly greater numbers than did the Liberal Arts students is to be expected, since the ECD students earned more credit hours and had higher grades than did the Liberal Arts students.

The finding that Quintile III achieved at a higher level than did Quintile I and Quintile II is not surprising. Since Quintile III was made up of the students with the highest ACT-C scores, it could have been predicted that they would have achieved at a higher level than the students with lower ACT-C scores.

Even though the factors cited in this section as contributing to the academic success of the ECD students cannot be directly connected to the success, they were all intended to help the students succeed.

First-Second Year

The finding that academic achievement during the first year in college exceeded that during the second year is unexpected. A more normal pattern might have been that as students of lesser ability dropped out of school, the remaining students would have tended to perform at higher levels. An examination of the cell means in Table 5.10 indicates that both the ECD and Liberal Arts groups fell off in academic performance during the second year of college. However, the drop for the ECD group was much greater than it was for the Liberal Arts group.

The drop in academic performance is of concern, but its cause cannot be determined in the course of this study. There are, however, some possible explanations. One is that despite the emphasis on the development of academic skills in the ECD Program, the students were not sufficiently prepared to handle the second-year work.

Another possible explanation is that while the ECD courses were "officially" equivalent to the Liberal Arts courses (i.e., Communications 150 = English 110), they may not have served the same function when they were substituted as prerequisite courses (i.e., Communications 150 for English 110 as a prerequisite for an English Literature class).

Yet another possibility is that when the ECD students moved to the Liberal Arts Program, they suffered a drop in academic performance similar to that experienced by two-year college students when they transfer to a four-year institution. This would be the "transfer shock" that Knoell and Medsker reported in From Junior to Senior College. Because the Liberal Arts Program is so different than the ECD Program, a period of adjustment is required when a student moves into the Liberal Arts Program. The time span covered in this study is not of sufficient duration to project any trend or to test this possibility. It is possible, however, that the ECD students would not suffer another drop when they transfer to a senior institution from the Liberal Arts Program.

Two Years

Even though the ECD group did less well during their second year in college than they did during their first, they still achieved at a significantly higher level than did the Liberal Arts group at the end of two years. As was found at the end of the first year, the ECD group attempted more cumulative credit hours, earned more cumulative credit hours, earned higher grades, and reached the levels of Success II and graduation at significantly higher levels than did the Liberal Arts group.

Several of these achievements are of particular importance. First, the ECD students earned, on the average, 8.33 credit hours more than did the Liberal Arts students. Second, 65 percent of the ECD students were successful (earned 48 or more credit hours at a G.P.A. of 2.00 or higher) while only 35 percent of the Liberal Arts students met this criteria. Third, the higher level of success is also reflected in that almost twice as many ECD students (18 percent) met the criteria for graduation than did the Liberal Arts students (10 percent).

Because the students were not in the ECD Program during their second year of college, it is not possible to attribute their success over the two-year span to some

specific ECD Program features such as block scheduling and team teaching. Rather it was intended that the emphasis on academic skills and the positive orientation to college would carry over into whatever course of study the student later attempted.

It is possible that the "head start" that the students received in the ECD Program may have carried them over a "sophomore slump." The higher levels of credits earned and grade point average may have helped the students over the drop in performance experienced in moving from one program to the other.

The higher level of graduation for the ECD group may be in part attributed to the more intensive counseling received in the ECD Program. The students were urged to get the A.A. Degree in case their plans for transfer or for further study were not realized.

It is interesting to note that there was much less variation between the Quintiles in the ECD Program than there was in the Liberal Arts Program. From the data in Table 5.17, it is apparent that Quintile I of the ECD group performed much more like the other two ECD Quintiles than Quintile I of the Liberal Arts group performed like the other two Liberal Arts Quintiles. Apparently the students

in Quintile I benefited the most from being in the ECD Program.

Five Semesters

There were no significant differences found between the ECD group and the Liberal Arts group on the measures of Success II and graduation at the end of five semesters.

Because more students in the ECD group had reached the level of Success II at the end of two years, it might conceivably have been found that these students were graduating at the end of five semesters, but that is not apparently the case.

There is a possible confounding variable that must be considered in this discussion of the findings. Many of the indications of the success of the ECD students are related to their higher grades. Credits earned, Success I, Success II, and graduation are all linked to grades. Since separate faculties taught the two groups of students, it is possible that different grading practices were used. That different grading practices were used by the drop in performance of the ECD students when they moved to the Liberal Arts program for their second year of college. However, if this were the case, it is not possible to say whether it was the first or the second year grading practices that were inappropriate.

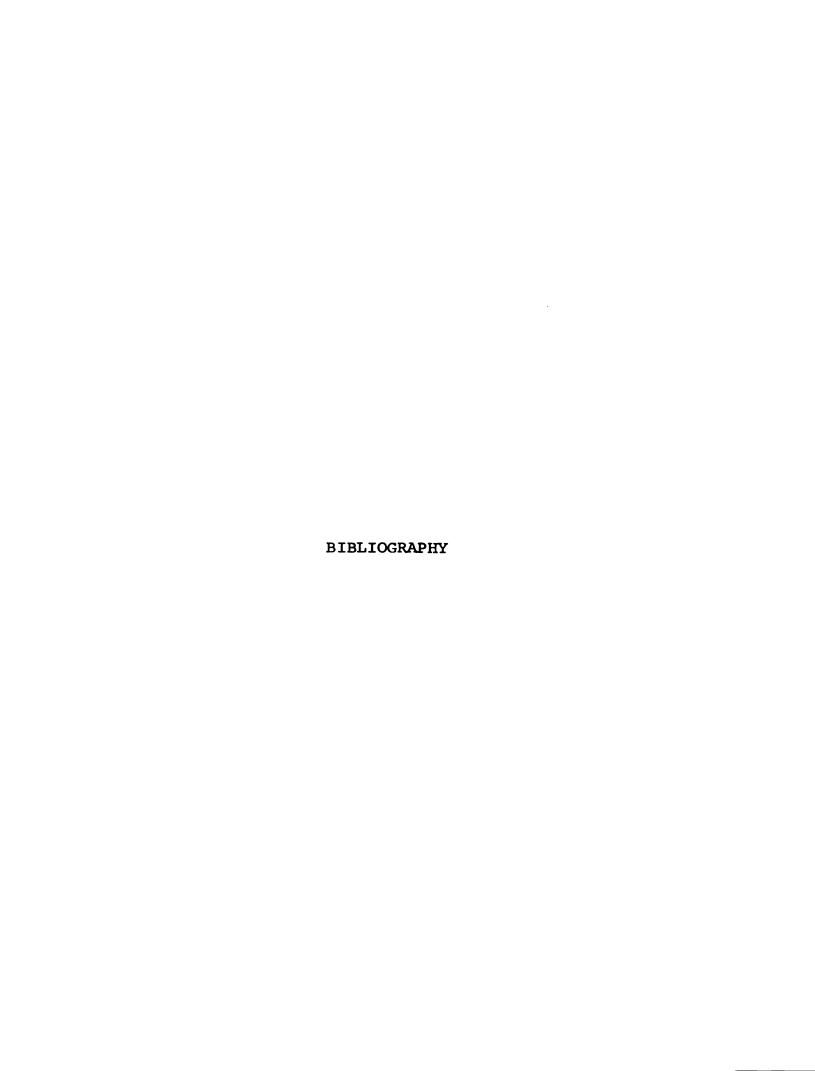
It should also be noted that the full impact of the ECD Program on students may not have been covered in this study. The entire area of non-cognitive growth and personality development is outside of the narrow scope of this study. It is possible that significant results would be found if this area were examined closely.

Implications for Further Research

The following research needs became apparent during the course of this study.

- 1. Research is needed to find out what component parts, if any, are instrumental in the success of the Educational and Cultural Development Program at Macomb County Community College.
- 2. Further research is needed as a follow-up to this study. It should focus upon students who transfer to senior institutions and study their progress at these institutions.
- 3. The area of the affective domain needs to be researched to see if any impact is made on the values, attitudes, and opinions of the students who were in the Educational and Cultural Development Program.

4. Follow-up studies need to be made of those students who pursue no further formal education after completion of the Educational and Cultural Development Program to see if they feel they benefited from participation in the Program.



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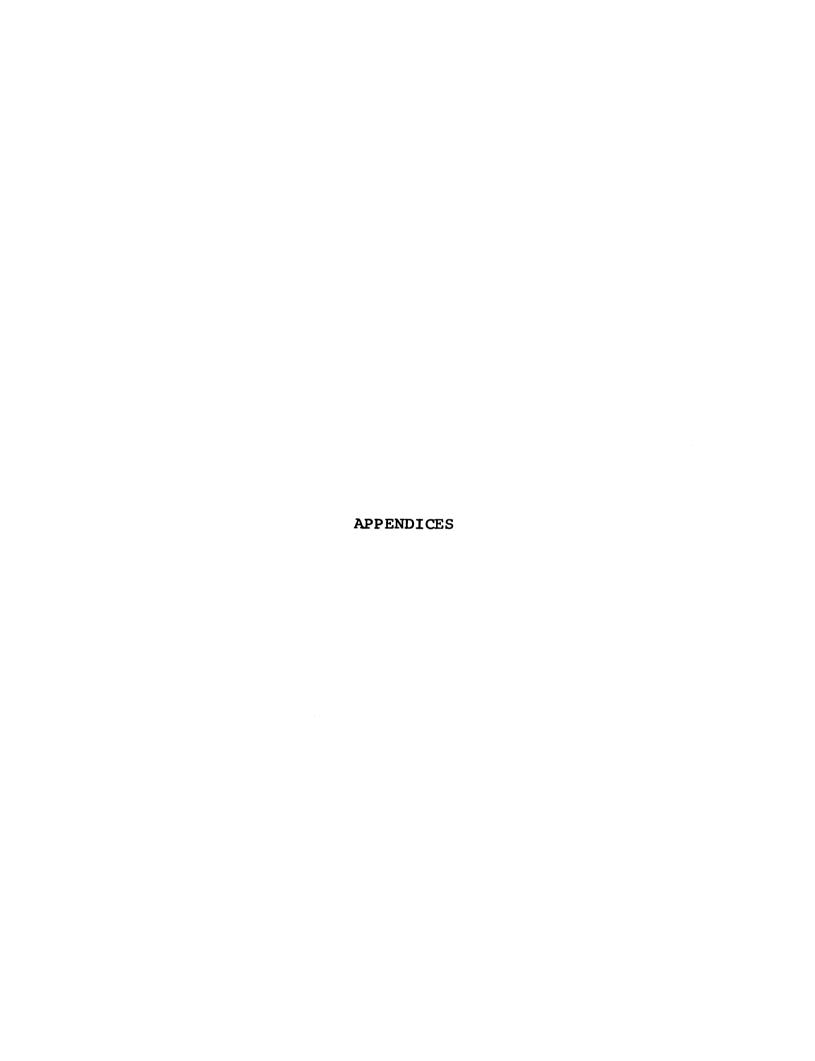
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APPENDIX A

COURSE DESCRIPTIONS

COURSE DESCRIPTIONS

COM 150 Communications 4 Sem Hrs
Emphasizes personal definitions of abstract terms, specific
support of generalized statements, and organization of
experiential writing. Selected essays, theme development,
outside readings, and group discussions to assist student's
proficiency in oral and written communication. For students
in the Basic Education program. (4 contact hrs)

COM 160 Communications Prerequisite: COM 150

4 Sem Hrs

Designed to equip students with methods for writing reports and analyzing articles, speeches, short stories, and poetry and to develop awareness of responsibilities in oral and written use of language. For students in the Basic Education program. (4 contact hrs)

HUM 150 Humanities

Experience in relating and tracing parallels and distinctions among works of art which embody Man's feeling and thought. Emphasis is placed upon the questions Man has pondered regarding his relation to the universe. For students in the Basic Education program. (3 contact hrs)

HUM 160 Humanities 3 Sem Hrs
Prerequisite: HUM 150
Continuation of HUM 150, emphasizing recurrent themes
and attitudes revealed in the arts. For students in the
Basic Education program. (3 contact hrs)

NS 150 Natural Science 4 Sem Hrs
Introduces basic principles of physical and biological
sciences to aid students in understanding the origin of
the earth, the beginning of life, its perpetuation on
earth, and the effects of heredity and evolution on society.
For students in the Basic Education program. (4 contact hrs)

NS 160 Natural Science Prerequisite: NS 150 4 Sem Hrs

Continuation of NS 150; analysis of the characteristics of living forms and their relationships to their environment; present-day problems confronting mankind with regard to disease, public health, and conservation. For students in the Basic Education program. (4 contact hrs)

ORI 150 Freshman Seminar 1 Sem Hr
Introduction to college requirements and facilities.
Interpretation of tests which aid students in assessing their abilities and interests and making educational and vocational plans. Introduction of study methods.
(1 contact hr)

ORI 160 Freshman Seminar 1 Sem Hr
Prerequisite: ORI 150
Study of tested values in relation to vocational objectives and human relations. In-depth study of an individual occupation. (1 contact hr)

SS 150 Social Science 4 Sem Hrs Fundamental problems of contemporary society. Nature of man, community, society, culture, and social adjustment. For students in the Basic Education program. (4 contact hrs)

SS 160 Social Science 4 Sem Hrs
Fundamental problems of contemporary society. Nature
of economics, political science, and international relations. For students in the Basic Education program.
(4 contact hrs)

APPENDIX B

SAMPLE STUDENT SCHEDULE

SAMPLE STUDENT SCHEDULE

| CK 15 | E. | | t) C. 150 E 309-1 | H. 150 F 312 | S.S. 150 E 309-1 | |
|--------------------------------|----------|--------------------------|------------------------|------------------------|---------------------|-------------------|
| FALL, 1968 SEMESTER - BLOCK 15 | <u>급</u> | C. 150 B 211 | O. 150 (6074) F 309 | | S.S. 150 B 209 | |
| FALL, 1968 | % | | H. 150 F 312 | C. 150 E 312 | | N.S. 150 B 209 |
| NO | E | N.S. 150 B 410 | N.S. 150 B 410 | | S.S. 150 B 209 | |
| DIVISION OF BASIC EDUCATION | ж Н | S.S. 150 (6078) F 309 | H. 150 (6071) B 211 | c. 150 (6070) B 209 | | N.S. 150 (6072) |
| DIVISIO | TIME | 9-10 | 10-11 | 11-12 | 12-1 | 1-2 |

APPENDIX C

MACOMB COUNTY COMMUNITY COLLEGE
DIVISION OF BASIC EDUCATION
TEACHING EFFECTIVENESS RATING SCALE

MACOMB COUNTY COMMUNITY COLLEGE DIVISION OF BASIC EDUCATION TEACHING EFFECTIVENESS RATING SCALE

| | MARK THE APPROPRIATE RESPONSE ON THE PUNCH CARD. | lor | rage | <u>Below</u> <u>Average</u> | Ы |
|-----|---|------|--------|--------------------------------|------|
| CHA | RACTERISTICS | Good | Averag | Bel Ave | Poor |
| 1. | Knowledge of subjectA | В | С | D | E |
| 2. | Organization and presentation of subject matterA | В | С | D | E |
| 3. | Stimulation of student interest in the subject | В | С | D | E |
| 4. | Effectiveness of techniques used to present subject matter in lectures. A | В | С | D | E |
| 5. | Relationship between examinations and assigned materialA | В | С | D | E |
| 6. | Methods of determining the gradesA | В | С | D | E |
| 7. | Promptness in returning student papers and examsA | В | С | D | E |
| 8. | Thoroughness in checking student papers and examsA | В | С | D | E |
| 9. | Instructor's enthusiasm for subjectA | В | С | D | E |
| 10. | Instructor's speech characteristicsA | В | С | D | E |
| 11. | Encouragement of student involve- ment in discussionA | В | С | D | E |
| 12. | Encouragement of student questionsA | В | С | D | E |
| 13. | Clarity and thoroughness of explanationsA | В | С | D | E |
| 14. | Tolerance or difference of opinionA | В | С | D | E |

| СНА | RACTERISTICS | Good | Average | Below Average | Poor |
|-----|--|------|---------|------------------|------|
| 15. | Fairness in treatment of students A | В | С | D | E |
| 16. | Interest in students; willingness to help resolve individual learning problems | В | С | D | E |
| 17. | Encouraging students to think and solve problems A | В | С | D | E |
| 18. | Overall evaluation of the instructor A | В | С | D | E |

APPENDIX D

MACOMB COUNTY COMMUNITY COLLEGE
DIVISION OF BASIC EDUCATION
GENERAL STUDIES PROGRAM EVALUATION

MACOMB COUNTY COMMUNITY COLLEGE DIVISION OF BASIC EDUCATION

General Studies Program Evaluation--150 June, 1968

| | | Circle the appropriate response | | | Did you find this <u>HELPFUL</u> educationally? | | | | Did you <u>LIKE</u> it? | | | |
|----|-----|--|------|----------|---|------------|-----------|----------|----------------------------|------------|--|--|
| | | | Very | Somewhat | Slightly | Not at all | Very Much | Somewhat | Slightly | Not at all | | |
| I. | Hum | anities | | | | 1 | | | | | | |
| | 1. | Lectures | .4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | | |
| | 2. | Discussion groups | .4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | | |
| | 3. | Slides and records | .4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | | |
| | 4. | Textbooks & reading material | . 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | | |
| | 5. | Trip to the art museum | .4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | | |
| | 6. | Take-home exams and projects | .4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | | |
| | 7. | Completing data sheet prior to writing visual arts paper | | 3 | 2 | 1 | 4 | 3 | 2 | 1 | | |
| | 8. | In-class exams | .4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | | |
| | 9. | Plays and concerts | .4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | | |
| | | | | | | ï | | | | | | |

| Program Page 2 | n Evaluation150 | | | | ! | | | | |
|-------------------|---|----------|-------------------|------------|-------------|----------------------------|------------|------------|--|
| raye z | Did you find this <u>HELPFUL</u> educationally? | | | | | Did you <u>LIKE</u> it? | | | |
| I. Hum 10. | Total course in Humanities4 | Somewhat | o <u>Slightly</u> | Not at all | A Very much | ω Somewhat | N Slightly | Not at all | |
| II. Nat | ural Science | | | | | | | | |
| 1. | Lectures4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | |
| 2. | Lab sessions4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | |
| 3. | Movies4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | |
| 4. | Programmed Learning Center a. Metric System Unit4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | |
| | b. Chemistry Unit.4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | |
| 5. | Textbooks4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | |
| 6. | Exams4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | |
| 7. | Introduction to Science Unit4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | |
| 8. | Chemistry Unit4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | |
| 9. | Geology Unit4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | |
| 10. | Total course in Natural Science4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 | |

| Program Evaluation150 Page 3 | | | Did you find this <u>HELPFUL</u> educationally? | | | | Did you <u>LIKE</u> it? | | | |
|---------------------------------|-----|--|---|----------|----------|------------|----------------------------|----------|----------|------------|
| III. | | ial Science | Very | Somewhat | Slightly | Not at all | Very much | Somewhat | Slightly | Not at all |
| | 1. | Lecture | | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 2. | Discussion | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 3. | Movies | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 4. | Textbooks & other reading material | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 5. | Total course in Social Science | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 6. | Was the Social Science reading material relevant current problems a interest? (Circle One) | | YI | ≅S | | | Ne | 0 | |
| IV. | Com | munications | | | | | | | | |
| | 1. | Teacher lectures | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 2. | Programmed Learning | ıg4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 3. | Help with writing & reading assign-ments in other classes | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 4. | The approach to writing (theme out line, grading slip etc.) | s, | 3 | 2 | 1 | 4 | 3 | 2 | 1 |

| Program Evaluation150 Page 4 | | | | | | | | | | |
|------------------------------|------|---|------|----------|--|------------|-----------|----------------------------|----------|------------|
| | this | | | | you find is <u>HELPFUL</u> cationally? | | | Did you <u>LIKE</u> it? | | |
| IV. | Com | | Very | Somewhat | Slightly | Not at all | Very much | Somewhat | Slightly | Not at all |
| | | writing | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 6. | Use of good and bad theme samples | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 7. | The <u>Autobiography of</u> <u>Malcolm X</u> | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 8. | Discussion groups (theory & practice) | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 9. | Total course in Communications | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| v. | Blo | ck Scheduling | | | | | | | | |
| | 1. | Attending all classes with the same students | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 2. | Having all your classes within a four to six hour block of time | | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 3. | Taking field trips with your instructs | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 4. | Having joint projects with several | | 2 | 2 | | • | 2 | • | |
| | | teachers | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 5. | City study project | 4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |

| Prog Page | | Evaluation150 | | | | | | | |
|--------------|-----|---|---------------------|------------|--------|------|---------|------------|--------|
| | | Dic thi edu | Did you LIKE it? | | | | | | |
| v. | | ck Scheduling ntinued) | hat | <u>t11</u> | at all | much | hat | <u>t17</u> | at all |
| | 6. | Having more than one instructor in a classroom at one | Somewhat | Slight | Not a | Very | Somewha | Slightly | Not a |
| | | time4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 7. | Finding all your teachers in one area4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| VI. | Fac | ulty-Student Relations | | | | | | | |
| | 1. | Faculty availability.4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 2. | Informal contacts between faculty and students4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 3. | Formal faculty- student contacts4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| VII. | | total General Studies gram4 | 3 | 2 | 1 | 4 | 3 | 2 | 1 |
| | 1. | What are the good poin Program? | ts of | the | Gene | ral | Stud: | ies | |

What suggestions would you make for the improvement of the General Studies Program?

| - | | | |
|---|--|--|--|

