A FOLLOW-UP STUDY OF THE FIRST GENERATION OF GRADUATES OF
AN EXPERIMENTAL CURRICULUM PROGRAM AT BISHOP COLLEGE

DISSERTATION

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By

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This study investigates two undergraduate curriculum programs at Bishop College in Dallas, in an effort to determine their effects upon selected groups of graduates, as measured in selected areas of their achievement before and after graduation.

Chapter One presents introductory information and delineates the problem, purpose, background and significance, limitations and basic assumptions of the study. Chapter Two presents the Experimental Curriculum Program at Bishop College, literature related to the Experimental Curriculum Program, and the pressing need for curriculum revision designed for the unique needs of black students in the black college. Chapter Three describes the procedures of the study--study design, selection of population samples and measuring instruments, and collection and treatment of data. Chapter Four reports findings relative to hypotheses and other findings. Chapter Five summarizes the first four chapters and offers conclusions and recommendations which have implications for black colleges engaged in curriculum
revision. Sixteen appendices give details of the organization, program, tests and materials of the Thirteen-College Curriculum Program.

Data include that from records of Bishop College and the Institute for Services to Education, and that from a response to the survey instrument of this study.

Fourteen hypotheses were formulated for testing selected areas of measurement. Each was tested by computer at the .05 level of significance, using the appropriate statistic for each. Analysis of these statistical data reveals that

1. Neither curriculum program attained a significant degree of difference from the other in the tests of the hypotheses involving the difference between the means of the two curriculum groups.

2. Experimental Program Students evidenced a direction towards higher mean scores on statistical tests of the difference between two means.

3. At the end of six years, Experimental Student retention was 41 per cent, and Regular Student retention was 35 per cent.

4. Participating students in both curriculum programs perceived a need for increased relevancy of curriculum experiences with problems in the community.

5. Participating students in both curriculum programs perceived greatest personal inadequacies to be inability for adequate self-expression and lack of self-confidence.
Conclusions of this study are as follows:

1. Neither curriculum program has attained a statistically significant degree of greater efficiency over the other in areas of students' undergraduate academic achievement, concepts of self and undergraduate academic experiences, and career involvement after graduation.

2. More stringent measurement than that of this study could possibly reveal that the Experimental Curriculum attained greater results to a statistically significant degree in more areas than did the Regular Curriculum.

3. Through achievement of a higher percentage of student retention, the Experimental Curriculum has attained greater effectiveness than the Regular Curriculum.

4. A need exists for increased relevancy of curriculum experiences to community problems.

5. A need exists for increased emphasis upon the student's development of effective self-expression and adequate self-confidence.

Recommendations based upon the findings and conclusions of this study are as follows:

Curriculum development and analysis should continue to be made at Bishop College, but with more effort to make the curriculum relevant and to help students to adequate self-expression and self-confidence. Findings of this study should be implemented by Bishop College and other black colleges in curriculum development.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th></th>
<th>vii</th>
</tr>
</thead>
</table>

**Chapter**

I. **INTRODUCTION** ........................................ 1

- Statement of the Problem
- Purpose of the Study
- Hypotheses
- Definition of Terms
- Background and Significance of the Study
- Limitations
- Basic Assumptions
- Chapter Bibliography

II. **RELATED LITERATURE** ................................. 23

- Introduction
- The Experimental Curriculum Program
- Chapter Summary
- Chapter Bibliography

III. **PROCEDURES OF THE STUDY** ........................... 49

- Study Design
- Selection of Students
- Selection of Measuring Instruments
- Collection of Data
- Treatment of Data

IV. **ANALYSIS OF DATA** ................................. 57

- Findings Relative to Hypotheses
- Summary of Findings Relative to Hypotheses
- Other Findings
- Chapter Bibliography

V. **SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS** .... 92

- Summary
- Conclusions
- Recommendations
APPENDICES

A. The Thirteen-College Consortium  
B. The Institute for Services to Education  
C. Fact Sheet on Program Students and Regular Students  
D. Superior Outcomes of Program Students  
E. SRA Verbal Form Test  
F. SRA Nonverbal Form Test  
G. Self-Analysis Form  
H. Survey of Interpersonal Values  
I. ISE Self-Assessment Form  
J. Summary of Fall Test Scores, 1968  
K. Letter from the Dean of Bishop College Concerning the Study  
L. The Post-Graduate Questionnaire  
M. Organization of the Experimental Program  
N. The Summer Workshop  
O. Sample College Fall Schedule  
P. The Experimental Curriculum Program Materials  

BIBLIOGRAPHY  

Page 102
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Comparison of Two Independent Groups on Achievement of Graduation within Four Years</td>
<td>57</td>
</tr>
<tr>
<td>II.</td>
<td>Comparison of Two Independent Groups on Academic Achievement Measured by the Cumulative Grade-Point Average</td>
<td>59</td>
</tr>
<tr>
<td>III.</td>
<td>Comparison of Two Independent Groups on Academic Achievement in Advanced Mathematics Courses</td>
<td>60</td>
</tr>
<tr>
<td>IV.</td>
<td>Comparison of Two Independent Groups on Academic Achievement in Advanced Science Courses</td>
<td>63</td>
</tr>
<tr>
<td>V.</td>
<td>Comparison of Two Independent Groups for Performance on the Graduate Record Examination</td>
<td>63</td>
</tr>
<tr>
<td>VI.</td>
<td>Summary of Chi-Square Values for Comparison of Two Independent Groups for Independence of Response to Statements on Academic Experiences</td>
<td>64</td>
</tr>
<tr>
<td>VII.</td>
<td>Summary of Chi-Square Values for Comparison of Two Independent Groups for Independence of Response to Statements on Undergraduate Academic Experiences</td>
<td>66</td>
</tr>
<tr>
<td>VIII.</td>
<td>Summary of Chi-Square Values for Tests of Goodness-of-Fit (No Difference) Between Two Related Groups for Time-Independence of Response to Statements of Academic Experiences</td>
<td>68</td>
</tr>
</tbody>
</table>
Table

IX. Summary of Chi-Square Values of Tests of Goodness-of-Fit (No Difference) Between Two Related Samples for Time-Independence of Response to Statements on Academic Experiences ........................................... 71

X. Summary of Chi-Square Values for Comparison of Two Independent Groups for Independence of Response to Statements on Concepts of Self .................................................. 74

XI. Summary of Chi-Square Values for Comparison of Two Independent Groups for Independence of Response to Statements on Concepts of Self .................................................. 76

XII. Summary of Chi-Square Values for Tests of Goodness-of-Fit (No Difference) Between Two Related Groups for Time-Independence of Response to Statements on Concepts of Self .................................................. 78

XIII. Summary of Chi-Square Values of Tests of Goodness-of-Fit (No Difference) Between Two Related Groups for Time-Independence of Response to Statements on Concepts of Self .................................................. 80

XIV. Comparison of Two Proportions on Attainment of Occupational Professionalism (OP) ........................................... 82

XV. Comparison of Two Proportions on Involvement in Continuation of Professional Development (CPD) ........................................... 83
CHAPTER I
INTRODUCTION

With a background of over one hundred years' experience, the black college has a special psychological and organizational orientation to the needs of disadvantaged black youth. According to Goldman (2) and McGrath (6), the predominantly black college may expect to continue to have the primary responsibility for the higher education of black youth for a considerable number of years.

In a rapidly changing world, the black college has found itself obligated, however, to readjust its focus. No longer can its black graduate seek a position in a society apart, but finds himself obligated to meet open job competition in an evolving, open, multicultural society. Thus the black college of today recognizes an additional task, that of preparing its students from generally disadvantaged backgrounds to compete with non-black students from non-disadvantaged backgrounds. For such a task the black college must be vigorously engaged in the improvement and expansion of its curriculum and teaching techniques.

In 1966, Bishop College was invited to become a member of a consortium of thirteen predominately black colleges, all of whom were interested in joining their resources to
bring about effective curriculum reform in their educational programs. Together they began to develop and implement an experimental curriculum program, the Thirteen-College Curriculum Program, which was established, the summer of 1967, on each campus of the consortium-member colleges.

The Experimental Program was based on the assumption that the curriculum must not penalize students for their backgrounds and educational weaknesses, finding means to overcome these weaknesses through a focusing on individual interests, needs and strengths in small classes that are specially oriented to student dialogue and activity.

Objectives of the program expressed in the proposal of the "Thirteen Colleges' Curriculum Program"... (9) were to:

1. Provoke students from intellectually undemanding environments to learn through a carefully designed innovative curriculum to the extent that they will be able to compete intellectually, socially, and culturally with success on entering the junior year of college.

2. Examine the extent to which the existing curriculum and teaching techniques can be newly designed with exciting, relevant, and intellectually significant innovation to overcome the deficiencies of a group of students who may not have been challenged intellectually or motivated academically to pleasurable learning.

3. Transmit the results of the experiment to the total college faculty so that the existing curriculum and teaching techniques may be improved and strengthened.

According to Groomes (3), the Experimental Program was projected to extend over a period of five years, to allow for
an evaluation of the success of the first group of Participating Students one year following graduation from college. At the end of the first five years, Humphries, Parmeter, and Turner (4) state that an evaluation of the Program reveals that, to be complete, studies may run up to six years because many black students attend college five and six years before their graduation.

This dissertation is a follow-up study of selected Participating Students, six years after the beginning of the curriculum experiment at Bishop College. These are students who are among those who entered Bishop College as Freshmen in September, 1967, and who graduated by August, 1973. Designated in this study as the First Generation of Graduates of the Experimental Program at Bishop College, they are viewed and evaluated according to undergraduate academic performance, concepts of self and of undergraduate academic experiences, post-graduate occupational professionalism, and post-graduate continuation of professional development.

Statement of the Problem

The problem of this study was to determine whether the two curriculum programs at Bishop College were any different in effect upon selected groups of graduates, as measured by:
(a) Undergraduate Academic Performance, (b) Senior-Year Concepts of Academic Experiences, (c) Post-Graduate Concepts of
Undergraduate Academic Experiences, (d) Senior-Year Concepts of Self, (e) Post-Graduate Concepts of Self, (f) Post-Graduate Occupational Professionalism, and (g) Post-Graduate Continuation of Professional Development.

Purpose of the Study

The purpose of this study was to make comparisons of selected groups of graduates from the Experimental Curriculum Program at Bishop College, in an attempt to assess to one of the programs a degree of greater effectiveness as measured by selected aspects of students' undergraduate and post-graduate achievement.

Hypotheses

To carry out the purpose of this study, the following hypotheses were formulated:

1. There will be no significant difference in the percentage of students in Group A and the percentage of students in Group B who have graduated within four consecutive academic years from the beginning of the experiment.

2. There will be no significant difference between the mean cumulative grade-point average (CGPA) of Group A and that of Group B.

3. There will be no significant difference between the mean grade score of Group A and that of Group B in advanced courses in (a) mathematics and (b) science.
4. There will be no significant difference between the mean combined score of Group A and that of Group B on the Graduate Record Examination (GRE).

5. There will be no significant difference between the frequency of response of Group A and that of Group B to each of selected statements on the "Senior Year Questionnaire" that pertain to academic experiences.

6. There will be no significant difference between the frequency of response of Group A and that of Group B to each statement on the "Post-Graduate Questionnaire" that pertains to undergraduate academic experiences.

7. There will be no significant difference between the frequency of response of Group A to each of selected statements on the "Senior Year Questionnaire" that pertain to academic experiences, and the frequency of response of the same Group A to each of the same statements on the "Post-Graduate Questionnaire."

8. There will be no significant difference between the frequency of response of Group B to each of selected statements on the "Senior Year Questionnaire" that pertain to academic experiences, and the frequency of response of the same Group B to each of the same statements on the "Post-Graduate Questionnaire."

9. There will be no significant difference between the frequency of response of Group A and that of Group B to each
of selected statements on the "Senior Year Questionnaire" that pertain to concepts of self.

10. There will be no significant difference between the frequency of response of Group A and that of Group B to each statement on the "Post-Graduate Questionnaire" that pertains to concepts of self.

11. There will be no significant difference between the frequency of response of Group A to each of selected statements on the "Senior Year Questionnaire" that pertain to concepts of self, and the frequency of response of the same Group A to each of the same statements on the "Post-Graduate Questionnaire."

12. There will be no significant difference between the frequency of response of Group B to each of selected statements on the "Senior Year Questionnaire" that pertain to concepts of self, and the frequency of response of the same Group B to each of the same statements on the "Post-Graduate Questionnaire."

13. There will be no significant difference in the percentage of members of Group A and the percentage of members of Group B who have attained Occupational Professionalism.

14. There will be no significant difference in the percentage of members of Group A and the percentage of members of Group B who are involved in a continuation of professional development in a graduate school or professional school of an institution of higher learning.
Definition of Terms

1. **Black College**.--the college which has an enrollment of predominantly black students.

2. **Control Group, Control Students**.--students who participated in the Thirteen-College Curriculum Program experiment as a comparison group, students who followed the regular curriculum of the college.

3. **Disadvantaged, Disadvantaged Student**.--according to Kneller (2): emanating generally from the lower classes, from depressed areas and from broken homes; a condition wherein individuals feel that they are not cared for, individuals who, in comparison to others, tend to be more aggressive and insecure, academically backward, more subject to neuroses, breakdowns, and deviant behavior.

4. **Experimental Curriculum**.--the Thirteen-College Experimental Curriculum, as developed and implemented by the Thirteen-College Consortium of Colleges, under the leadership and guidance of the Institute for Services to Education.

5. **Experimental Curriculum Program, Experimental Program**.--the "College within the College," consisting of the Thirteen-College Curriculum Program Department of the College: Experimental Program Director, Counselor, secretaries, faculty, students; the Experimental Curriculum Program courses, materials, regulations, requirements, teaching methodologies, testing and research, staff seminars and
workshops, and academic records of the comparison group--the Control Students.


7. Five Per Cent Level (.05 level) of Probability.--the level of probability wherein any significant results obtained would have occurred by chance 5 per cent of the time.

8. Frequency of Response.--the mean frequency, on the four-point scale, with which each group of students responded to a given statement on each of the questionnaires, measurement instruments of this study (Appendix L). The scale is:
   Response (a) = strongly agree (value, four points)
   Response (b) = usually agree (value, three points)
   Response (c) = usually disagree (value, two points)
   Response (d) = strongly disagree (value, one point).


10. Participating Students.--students who, as undergraduates, were members of either the Experimental Curriculum Group or of the Regular Curriculum Group.
11. **Profession, Professionalism.**--according to Moore (3), an occupational state wherein exist the following attributes:

   a. Full-time commitment to a practice which requires an enduring set of normative and behavioral expectations.

   b. Possession of knowledges and skills based on education of exceptional duration, and difficulty.

   c. Exhibition of competence, ethical conduct, and perception of the needs of individual or collective clients.

   d. Performance involving judgment and authority and resulting in an autonomy restrained by responsibility.

12. **Program.**--the Experimental Curriculum.

13. **Regular Curriculum.**--the regular curriculum of the college.


**Background and Significance of the Study**

Equal opportunity is one of the fundamental precepts upon which a democracy has to depend for its existence. However, past social and educational inequities have done
much to make our present society inherit the dilemma of equitable integration of those minority cultural groups who have, as a result of these inequities, been largely denied access to their fullest citizenship and occupational potential.

Although other minority cultural groups have met with past social and educational inequities, the cumulative results of over one hundred years of such inequities upon members of the black society warrant a separate focusing upon their present unique problems.

Many institutions of higher education, particularly predominantly black colleges, are concerned with the problems of disadvantaged black youth and recognize a responsibility to provide for them improved and expanded educational opportunities. The traditional curriculum, with its traditional techniques and materials, is lacking in flexibility for adaptation to this new concern. Thus, there is an immediate need for new curriculum design in which developing techniques, devices and methods can produce increased positive resultants in student retention as well as in academic performance--an immediate need for innovative educational measures designed especially to bridge the gap that exists between the academic and cultural experiences of disadvantaged black students and the new social and occupational opportunities available to them.
It was in approaching this educational challenge that the Thirteen-College Curriculum Consortium was organized in 1966 (Appendix A). According to Parmeter (8), the Experimental Program that they conceived was designed to increase academic performance as well as to reduce the attrition rates of Program Students through well thought-out, new curriculum materials (Appendix P), teaching styles and faculty arrangements for instruction.

The summer of 1967, after months of cooperative planning, the Experimental Program was established at Bishop College as well as on each campus of the consortium-member colleges (Appendix M) with the organization of the "college within the college." Under the leadership of the Institute for Services to Education (Appendix B), a director, one or more counselors and faculty were appointed from the regular faculty of the college (Appendix M), and subsequently oriented to the program in the first of continuing summer workshops (Appendix N).

The fall of 1973, after six years of participation in the Experimental Curriculum Program, Program research reports that have been accomplished on the Bishop College campus have been in the specific subject areas of Chemistry and Biology. Institutional data which compares the Experimental and Control Students include attrition data, standardized test scores, and grade-point averages through the
junior year (Appendix C). Periodically these data have been reported to the Institute for Services to Education, which, in turn, has made statistical analyses and interpretations and successive disseminations of the results as combined consortia data.

No formal study has been made for the evaluation of the general program in this institution as to its comparative effect upon Experimental Curriculum Program Students and Regular Curriculum Program Students, either by Bishop College, by the Institute for Services to Education, or by independent research. As for planned individual institutional reports to be made by the Institute for Services to Education, Turner (10) says that future studies and reports of the Institute will examine selected questions from the "Senior Year Questionnaire," college by college, to explore the differences among colleges, but without naming the colleges. Then, data will be related to the question of achievement, retention, and post-graduate student planning.

In the Thirteen-College Curriculum Program Progress Report: 1967-1972, Humphries, Parmeter and Turner (4) delineate by means of consortia data that the Experimental Curriculum Program Students, as compared to the Regular Curriculum Program Students, show superior results in retention, in grade-point averages (Appendix C) as well as in scores on standardized tests and in other quantifiable areas (Appendix D).
The records of the Thirteen-College Curriculum Program Office of Bishop College evidence the superior achievements of the Experimental Curriculum Program Students, as compared to those of the Regular Curriculum Program Students on student retention, grade-point averages and on standardized tests.

The Thirteen-College Curriculum Program battery of tests (Appendix J) includes:

1. The ACT, the American College Testing program tests of educational ability: (a) English Usage Examination, (b) Mathematics Usage Examination, (c) Social Studies Reading Examination, and (d) Natural Science Reading Examination. This test was administered the fall and the spring semesters of the freshman year and the spring semester of the sophomore year.

2. The SRA, Science Research Associates, Intelligence Test, (a) Verbal Form (Appendix E), and (b) Non-Verbal Form (Appendix F), administered in the fall semester of the freshman year.

3. The IPAT, Institute for Personality and Ability Testing, Self-Analysis, a personality test (Appendix G), administered in the fall semester of the freshman year.

4. The survey of Interpersonal Values (Appendix H), administered in the fall semester of the freshman year.
5. The ISE, Institute for Services to Education (College and University Student Survey), Self-Assessment Form (Appendix I), administered in the spring semester of the freshman year.

Upon the basis of the data of the Thirteen-College Curriculum Program Office of Bishop College, and the Thirteen-College Curriculum Progress Report: 1967-1972 of Humphries et al (4), Bishop College has implemented the Experimental Program across the entire freshman class. The college is now looking for research which can establish the validity of the claims of the Institute for Services to Education as to the Experimental Program (Appendix K).

This study takes issue with existing evaluation of the Program on the Bishop College Campus by questioning the adequacy of the standardized instruments utilized in establishing the conclusion of superior achievements of the Experimental Curriculum Program students:

1. This study does not recognize the ACT, the American College Tests of educational ability to be adequate instruments when used on the college level to measure achievement.

2. This study does not recognize the SRA, the Science Research Associates, Intelligence Test to be an adequate instrument when used to compare the aptitudes of groups of college students from the same cultural background.
3. This study does not recognize that scores from two groups of students, randomly selected from one homogenous group, will almost consistently evidence one group to achieve superior results in academic achievement, aptitude and self-concept within the period of one year (Appendix J).

A comparison of instruments of measurement used in the Program and in this study are as follows:

1. Data concerning attrition of Experimental Group and Control Group Students
   a. Experimental Office Measurement: Same
   b. This Study: Same

2. Grade-point averages
   a. Experimental Office Measurement: Grade-point averages compared through the junior year.
   b. This Study: (1) Cumulative grade-point averages compared through the senior year;
      (2) Grade-point average compared in advanced courses in mathematics and science.

3. Aptitude and Achievement as measured by Standardized Tests
   a. Experimental Office Measurement: (1) American College Testing program tests of educational ability; (2) Science Research Associates
Intelligence Test; (3) Institute for Personality and Ability Testing Self-Analysis.

b. This Study: (1) Graduate Record Examination Scores.

4. Senior-Year Attitudes towards Academic Experiences and Concepts of Self

a. Experimental Office Measurement: Data from the "Senior Year Questionnaire" analyzed and utilized by the Institute for Services to Education in the developing curricula for the entire consortia.

b. This Study: Select data from the "Senior Year Questionnaire" used for a comparison of responses by selected Participating Students to the same statements as they appeared on the "Post-Graduate Questionnaire."

5. Post-Graduate Attitudes towards Undergraduate Academic Experiences and Concepts of Self.

a. Experimental Office Measurement: None

b. This Study: Data from the "Post-Graduate Questionnaire," instrument of this study, analyzed and utilized for recommendations to Bishop College and similar institutions to effect possible curricula change.
6. Post-Graduate Attitudes towards Undergraduate Academic Experiences
   a. Experimental Office Measurement: None
   b. This Study: Responses to select items from the "Senior Year Questionnaire" were compared with responses to the same questions on the "Post-Graduate Questionnaire" to note time effect upon students' attitudes toward undergraduate academic experiences and self-concepts. Recommendations are made to effect possible curricula changes on the Bishop College campus.

7. Follow-Up Records of Alumni
   a. Experimental Office Measurement: No comparison has been made of Experimental Program Graduates and of Regular Curriculum Program Graduates.
   b. This Study: A comparison has been made of selected Participating Graduates from the two curriculum programs as to post-graduate involvement in Occupational Professionalism and/or Continuation of Professional development.
Limitations

1. This study was limited to the black students of Bishop College who
   a. entered Bishop College as freshmen in September, 1967,
   b. graduated from Bishop College by August, 1973,
   c. participated in the Experimental Curriculum Program as either Program Students or as Control Students,
   d. responded to the instrument of this study, the "Post-Graduate Questionnaire," (Appendix L).

2. This study was limited to the Experimental Curriculum Program at Bishop College with results not applied to previous measurement within the program at the college.

3. This study was limited to the following areas of the Experimental Program at Bishop College:
   a. Setting and Background
   b. Program Description and Objectives
   c. Selection of Staff and Students
   d. Curriculum Components
   e. Course Descriptions
   f. Evaluation

4. This study was limited to a comparison of achievements of the two groups of Participating Students as measured by:
a. Undergraduate Academic Performance
b. Senior-Year Concepts of Academic Experiences
c. Post-Graduate Concepts of Undergraduate
   Academic Experiences
d. Senior-Year Concepts of Self
e. Post-Graduate Concepts of Self
f. Post-Graduate Occupational Professionalism
g. Post-Graduate Continuation of Professional Development.

Basic Assumptions

1. It was assumed that the data supplied for the purpose of this study by the Research Office of the Institute for Services to Education and by the Registrar's Office of Bishop College were valid and reliable.

2. It was assumed that the cumulative grade-point average was a valid index of student academic achievement at Bishop College.

3. It was assumed that Occupational Professionalism and/or continuation of professional development in a graduate school or a professional school of an institution of higher learning were valid indices of post-graduate achievement.

4. It was assumed that the subjects would respond honestly to the survey instrument of this dissertation, the "Post-Graduate Questionnaire."
5. It was assumed that the subjects would recall undergraduate experiences referred to by the "Post-Graduate Questionnaire."


CHAPTER II

RELATED LITERATURE

Introduction

Before coming to college, the black student faces the choice between a black college or a white college, involving the variables of scholastic achievement, finances, psychological preparedness to meet the complexities of close multi-cultural association, need for psychological security of the all-black environment, and the availability of curriculum in the preparation for a desired career.

Often not until enrollment is complete does the average black college student discover that he has an inadequate pre-college academic foundation and financial problems which may often interfere with his education, according to McGrath (10). The Institute for Higher Educational Opportunity (9) adds that, together with other problems, the black college student often brings with him to the campus negative psychological attitudes that are resistant to change.

With an enrollment of approximately sixty per cent of the black college students in the nation, according to the Statistical Abstract of the U.S. (11), the black college
is aware that it possesses a unique orientation for serving the intellectual and psychological needs of these students in their effort to respond effectively to the new demands and opportunities of a multi-cultural society. Henderson (7) states that for those students with imbalance in pre-college academic preparation the black college has a serious need to adjust curriculum and instruction. The problem is acceleration of achievement, not remediation, more carefully organized curricula and instruction to move inadequately prepared youth at a faster pace in their adjustment to higher education. To do so, curriculum experiences must cut through the maze of conventional syllabi and instructional procedures, in an effort to counteract high attrition rates and to establish relevancy with modern and future social and economic development.

The commission on Higher Educational Opportunity in the South (4) recommends that the black college make a comprehensive revision of its curriculum, examining the major degree programs, courses of study, and course content--with the purpose of making the curriculum conform to students' interests, abilities, needs and opportunities.

Curriculum revision in the black college represents a relatively new venture, states Groomes (5). Increased interest in the improvement and expansion of educational opportunities for black students has given the impetus to curriculum modification.
The Experimental Curriculum

Setting

Bishop College, the location of the curriculum experiment delineated in this report, was founded in Marshall, Texas, in 1881 by a group of ex-slaves assisted by the Baptist Home Mission Society. It was chartered in 1886 as a liberal arts institution, under the laws of the State of Texas, and offered academic programs of professional preparation for teachers and ministers, and pre-professional training for lawyers, doctors and dentists.

Under the leadership of the United Negro College Fund, reports Gupta (6), the College moved to Dallas in 1961 and established a campus on 387 acres. After twelve years the physical plant is valued, according to the Institutional Narrative (2), in excess of $18 million and consists of twenty-six structures and a football stadium.

The college is organized into six undergraduate divisions according to the Bishop College Catalogue (1), Business, Education, Humanities, Natural Sciences and Mathematics, Religion and Philosophy, and Social Sciences. Majors are offered in twenty-seven subject areas; several majors are offered through cooperative programs with Southern Methodist University, the University of Texas at Dallas, the University of Dallas, Baylor University, Austin College, and Stephens College. Programs with these colleges
offer majors in accounting, engineering, geology, and physics. A full-time instructional staff of 105 is integrated, with 40 per cent of these holding the earned doctorate.

A student body of 1655 predominantly black students provides a faculty-student ratio of 1 to 15.76. Approximately 46 per cent of the students are from Texas, and another 35 per cent are from Southern states. With their total academic experiences before 1967, the majority of the students selected for this study received a pre-college education in segregated, Southern schools, schools often lacking in adequate programs and facilities. The Bishop College student is thus typical of the black college student who arrives at college with educational and personal problems resultant from generations of negative economic and social forces.

The Bishop College "Institutional Narrative" (2) relates that the college has maintained an accelerated growth pattern, maintaining a broad base of financial support and providing for continuous evaluation of programs and services. The academic program has been geared to change and relevance, with faculty, staff and students active in inter-institutional programs. Innovations in instructional program and revisions
in curriculum have been the means of adding new dimensions to academic experiences, and in providing extensions to choices of careers that students will pursue upon graduation.

It is possible that Bishop College is involved in more consortium arrangements than any other similar institution in the country. The academic year of 1973-74 the College has been involved in some fourteen to sixteen programs which cover, in one way or another, almost every aspect of its institutional concerns. If added to this list are the bilateral arrangements between Bishop College and other single agencies, institutions, or foundations involving research, faculty and student exchanges, college-industry relations, as well as college-supporting constituency relations, the number of relationships with external agencies would approach thirty to thirty-five.

The existence of consortium arrangements and bilateral agreements evidence the viability of the institution and its sensitivity to the need for maintaining relevancy with the dynamics of a galloping technology in the midst of an evolving society.

Background

A consortium arrangement involving curriculum experimentation is that of the Thirteen-College Consortium. In 1966 Bishop College was invited to join twelve other black
colleges (Appendix A) in a cooperative venture of curriculum experimentation and development. Groomes (5) relates that the idea for this venture stemmed from the success of summer writing institutes and programs to give teachers from black colleges opportunities to do advanced work in their fields and to become oriented with trends in curriculum reform. These early institutes led to the organization of the Institute for Services to Education (Appendix B).

Program Description and Objectives

Rationale.--The Experimental Program (Appendix M) started, according to Turner (12), from the fact that the existing system of instruction was not working and that answers did not lie in more intensive efforts along the established lines. The solution to the problem, as held by the Institute for Services to Education (Appendix B) is that education today requires a fresh examination of what is worth teaching and how to teach it.

Student Objectives.--Student objectives, according to Turner (12), surround the need to develop their abilities to cope with the world on their own terms and to work to change it for the better. This means that students must know specific things about specific subjects, as well as how to find their way around the intellectual, moral, and aesthetic worlds. The Program seeks to develop in each student possession of an adequate fund of knowledge, courage,
sensitivity, initiative, responsibility, and independence, all being fundamental requisites for self actualization, citizenship and occupational efficacy.

To implement these objectives, the curriculum must provide, according to Braithwaite (3): (a) a knowledge of those things which constitute the basic rapport among educated men of all cultures, and (b) compensation for inadequate pre-college academic preparation, by re-inforcing educational foundations of students for more advanced learning. These concerns must be manifest in the learning areas deemed necessary for all students: communication and creative skills (humanities), problem solving skills (mathematics), social skills (social science), environmental skills (natural science), and life understanding skills (philosophy).

**New Roles for Teachers.**—According to Turner (12), the traditional role of the teacher in many colleges, and especially in the predominantly black colleges, is that of the authority; the teacher lectures the student, tests the student, and paces the student. In this role, the teacher cannot admit his ignorance when he doesn't know the answers. Questions from students are evaded, particularly when they have reference to fields other than the teacher's specialization.
The Thirteen-College Curriculum Program views the teacher not only as a scholar but also as a learner, and provides him with the time and resources to continue learning. As a learner he is supposed to know something, although not everything; most importantly, he is supposed to know how to find things out. He is a scholar insofar as he keeps abreast of developments in his field and continues to pursue knowledge of special interest to him. In addition, by means of participation in curriculum development and other forms of educational innovation, he is also a learner in the sense of investigating what is worth teaching and learning how to teach more effectively.

**New Teaching Strategies.**--The objectives of teaching strategies are, according to Groomes (5):

1. to provide an open and relaxed learning environment through which students are encouraged to raise questions and initiate lines of inquiry;

2. to use an expanded variety of presentation techniques: audio-visual media, resource persons, consultants, interdisciplinary faculty;

3. to use materials developed especially for the Experimental Curriculum Program;

4. to avoid the lecture-recitation method of teaching;

5. to give open-ended tests of the essay or
short-answer variety to give students an opportunity to construct and/or synthesize responses;

6. to grade students on their determination and effort, with some use of the incomplete, or "I" grade, so as to afford maximum opportunity for the student to overcome background deficiencies.

Selection of Staff and Students

Staff.--According to Braithwaite (3), the initial staff for the Experimental Curriculum (Appendix M) on each campus consisted of a Director, a Counselor, and eight teachers for the first year courses. At the beginning of the second year of the program, four additional instructors were added, two for humanities and two for the philosophy course.

The initial staff were regular members of the college faculty. Other instructors were newly recruited to participate in the Experimental Program.

The instructional load of each instructor consisted of two sections of twenty-five students each throughout the school year (Appendix 0).

Qualifications for teachers, counselors and directors (Appendix M) were outlined by the Institute for Services to Education (Appendix B).

Experimental Program Students.--According to Braithwaite (3), one hundred students were randomly selected to participate
in the Experimental Program. These were taken from among eligible freshmen applicants whose family income met the level of financial need stipulated by conditions of the Title III grant from the Office of Education. These students understood that, for participation in the Experimental Program, their benefits would include all books and materials and twenty dollars monthly stipend for the first year.

In the first year Experimental Curriculum Program, the students selected were enrolled in the four experimental program courses (Appendix 0)—English, mathematics, social science, and science, as well as physical education and, for the men, military science. The second year of the program these students were enrolled in the two Program courses—humanities and philosophy—taking the remainder of their classes this year and subsequent years in the regular curriculum program of the college.

Control Group Students.—Approximately two hundred freshman students were randomly selected to establish a comparison group. These were taken from among freshman applicants from families of similar financial status as those families of Experimental Program Students. These students followed course requirements from the regular curriculum of the college, had no personal participation in the curriculum experiment, and therefore, received no remuneration.
Curriculum Components.--The three main components necessary to begin the process of curriculum improvements, according to Braithwaite (3), were:

a. a redesigned freshman program;
b. sophomore courses to continue the progress of the first year which would involve the student only part-time so that he could begin his studies in a major field; and
c. a summer curriculum writing conference for teachers to work out plans.

The total curriculum of the freshman student was to be divided into four courses. Unlike the usual semester scheduling, class meetings were planned to meet more frequently than two or three times a week, allowing much time for a variety of classroom activities--dramatizations, films, field trips, etc. Curricula experiences were divided equally among Ideas and Their Expressions (expanding the traditional freshman English program), Social Institutions (replacing the social science survey course), Quantitative and Analytical Thinking (providing innovative materials and procedures) and Natural Science (biological and physical sciences). The Natural Science course became two semester courses, one in Biological Science and one in Physical Science during the second year of the program.

Two sophomore courses were planned for the second year of the program with the addition of four additional teachers,
two for each. These courses were Humanities and Philosophy, the latter being also known as Common Elements of Knowledge. The aim of these was to allow the student an opportunity to deepen and enrich his knowledge and learn more about thought processes and their significance in the experiences of this world. The completeness of the general education of the program was designed to feed a new kind of student into the colleges' major programs and to influence observing faculty members into making changes to update old structures and attitudes.

A key feature of the planning for the whole program was the annual Summer Workshop (Appendix 0). The cooperating institution, Clark College, was assigned the task of planning living accommodations, working facilities and consultants for the teachers who were designated responsibility revising the developing experimental curriculum in the workshop.

Course Descriptions

Turner (12) states that the new and improved curriculum would begin in the freshman year with courses in the traditional areas of English, mathematics, social science, physical science and biology. In the sophomore year the experimental curriculum would include the areas of humanities and philosophy.

The Bishop College Catalogue (1) describes the Experimental Program as follows:
The Thirteen-College Curriculum Program is an experimental and creative approach in the teaching and learning processes with a focus on stimulating thought and provoking innovations in the general education course offerings. For this program, integrated and cooperative learning is designed explicitly to instill in the student a confidence in his own potentialities so that he will recognize his capacities and assume the responsibilities for choosing and shaping the quality of his life. Every aspect of the design of the program is structured to introduce the student to sympathetic teachers, stimulating classroom atmospheres and a varied range of experiences that are conducive to personal and intellectual growth.

Ideas and their Expression I (English).--According to Turner (12) the course on Ideas and their Expression treats together the study of composition and the study of the humanities, primarily literature. Writing as usually taught has the objective of learning to write clear expository prose. In this course the teaching of writing has a larger context: What the student says and how he says it is viewed as part of his own search for identity and competence.

The study of literature also is viewed in a larger context: The fundamental purpose of literature is to establish connections to life, to relate about life. Literature is understood against the experience of one's own life, but also through literature, as well as other art forms, one comes to enlarge that experience, and hence his own life.
The Bishop College Catalogue (1) describes the course in the following manner:

Ideas and Their Expression--The emphasis upon the expression of ideas has led to the development of a thematic approach to literature, art, and music. Themes such as Power, Self and Alienation, Choice and Temptation, and Responsibility are explored through the various creative and expository media whether tapes and films or visits to cultural events, though the emphasis is upon the development of student responses to written material.

According to Humphries, et al (8), the curriculum materials (Appendix P) for the English Course consist of four sequences of units developed around the themes of Responsibility, Love, Choice, and Self and Alienation. Each sequence has a manual which contains: (a) a collection of selected essays, poems, short stories and excerpts from plays and novels; (b) an explanation of Chamber Theatre Technique with a sample script; (c) writing exercises; (d) suggested topics for expository and creative writing; (e) questions for class discussion and/or independent research; (f) recommended group activities; (g) topics for independent research projects; and (h) representative samples of work done by students in previous semesters in the Thirteen College Curriculum Program.

Each sequence is equivalent to one semester's course of study, providing a variety of works: simple, complex; classical, modern, representing all genres. Teacher Manuals contain varied pedagogical approaches which rely heavily
upon the use of a student-centered classroom with a flexible, inductive teaching style. The materials (Appendix P) are, therefore, designed to stimulate students to question, challenge, discuss, and ultimately to write and read more widely and more effectively.

Quantitative and Analytical Thinking (Mathematics).--According to Turner (12), instruction in mathematics faces the difficult task of working with several audiences at the same time: the career mathematician, the professional who needs math as an occupational tool, and the individual who will only use math in personal transactions. For all, the subject is designed to stimulate creative thinking, analysis, and intuition, aspects of mathematics generally neglected in the schools and in the early years of college instruction. Such instruction in the freshman year should give both the prospective mathematician and the user of mathematics a better preparation for more mature work in mathematics.

The Bishop College Catalogue (1) describes the course as follows:

Quantitative and Analytical Thinking (Math 111, 112) -- The learning approach in this course is one in which the student rather than a text or an outline becomes the directing force that determines the selection and sequence of material. Units have been developed that start with situations and problems designed to arouse the interest and curiosity of the students, and from which they can discover relationships and concepts new to them. Topics from topology, probability, linear algebra and number theory, as well as more traditional topics, are developed in these units.
The curriculum materials (Appendix P) consist of fourteen units, more than the teacher can use by allowing selection depending upon interests and needs of the student. The units begin with mathematical involvements, designed to excite participation and learning and to reveal new mathematical relationships and concepts through emphasis upon imagination and thinking.

Social Institutions: Their Nature and Change (Social Science).—According to Humphries, et al (8), the design of the course is that of themes developed to embrace several of the traditional disciplines but which are not so grandiose in design as the usual survey course. The approach seeks to relate class experiences to the student's own experience, and to let students build their own explanations and theories through exercises starting from this base. The course also investigates the divergent views of recognized scholars on various topics, and considers why they hold separate views about the same phenomenon, how their closeness or distance from a situation affect their views.

The Bishop College Catalogue (1) description of the course is as follows:

Social Institutions: Their Nature and Change—Materials relating to this theme are organized around five topics: youth and society, the family, American cities and urban problems, the civil rights movement, and revolution. These topics were selected because of their special interest for college freshmen. The use of case studies, essays, films, tapes, and independent research gives students practice in
productive thinking, inductive and deductive reasoning, hypothesis formation and testing, and generalization.

According to Humphries, et al (8), the course consists of three sequences. The manual for each sequence contains selections from magazines and books, non-fiction and fiction. The manuals also contain suggestions for additional reading and activities, such as simulation games and street corner research.

The traditional class consisting of lecture periods and the reading of one or two staid textbooks is virtually extinct. Instructors recommend and encourage open discussions, panels, out-of-class work by small groups. Students read from as many as 35 sources for a sequence. In addition, numerous outside authorities on differing topics are brought in and extensive use made of movies, film strips, tapes and records.

Natural Science (Physical and Biological).--Turner (12) states that in making science a requirement in the program, even for non-scientists, the effort is to break the cycle in which negativism for science is communicated from generation to generation.

The course in the natural sciences (especially physics), like mathematics, has the problem of addressing simultaneously several audiences. The course must prepare students who plan to major in science, and at the same time, serve as a
terminal course in science for the non-scientists. There is also the hope to interest students in science or science-related careers, students who previously had not considered majoring in this area.

The course in experimental science includes biology, physical science, and an integrated science which encompasses chemistry, physics and biology. The Bishop College Catalogue (1) describes these courses in the following manner:

The Physical and Biological Sciences--These courses are designed to encourage students to ask a variety of questions about phenomena rather than starting with marked abstractions. The hope is that students will learn, by example, the habit of some of the scientific ways of asking questions about themselves and their environment. Physics, chemistry, and biology are integrated around five major topics which are common to all: Measurement, Motion, Energy, Matter and Waves.

According to Humphries, et al (8), each of the seven units is self-contained. A fundamental concept is given, then developed in a spiral fashion through a hierarchy of levels. Each level presents the development of at least one fundamental idea from empirical data obtained in the laboratory, the demonstration of the utility of the concept, and a natural termination point. Any given unit in a course sequence may be interchanged with almost any other; consequently, a teacher may construct his course around the sequence of units that are most fitting to his own interests and to the background of his students.
Ideas and Their Expression II (Humanities).--The course in Ideas and Their Expression II, according to Groomes (5), is a composite of the various forms of art, music and literature based upon the stances which man assumes as he exposes his reaction to ideas: Man, the Protector; Man, the Witness; Man, the Absurdist; and Man, the Myth Maker. Presentation is designed so as to lead the student towards a process of self-discovery.

The Bishop College Catalogue (1) describes this course in the following manner:

Humanities--The humanities course aims to develop the student's ability to comprehend a work of art. Hopefully, the student would by the end of the year, both have arrived at a sense of integrity of his own taste, and have developed the ability to defend his aesthetic judgments. The course will be as much concerned with how material is presented as with what is taught. The prediction is that students will emerge with an awareness that men nowhere and in no time are exactly alike, or totally different; that men persist in asking why they are, and what they are; and continue to create fresh styles and forms for asking these questions. Together these form the substance of human thought and human art. The humanities course seeks to help students participate more meaningfully in both.

The course, according to Humphries, et al (8), consists of five sequences (Appendix P). Because so much of the course depends on the student's active participation in his work, each sequence combines a section on basic concepts and theoretical ideas with practical exercises and techniques so as to invite the student to articulate his perceptions.
through similar means. Slides, records, tapes and films supplement the materials of each sequence as well as drawings and photographs by teachers.

The humanities classroom becomes the scene where the student's introspection of his own life takes precedence, as an intellectual pursuit, over the academics within textbooks. Students who have wrestled with form and content in the making of simple artistic creations will understand more easily the application of form and content when it is asked with reference to ritual drama, modern architecture or abstract painting. Likewise, the students who become involved in the creation and imaginative use of slides, stage design, costumes, videotape and film in the production of an original dramatic work are sure to recognize the prevailing influence of media upon every aspect of contemporary life.

Common Elements of Modern Knowledge (Philosophy).--The course in Common Elements of Modern Knowledge, according to Groomes (5), emphasizes the development of analytical skills, especially the "analyses of elements" and the "analyses of relationships," to develop an understanding of the philosophical nature of social issues.

The Bishop College Catalogue (1) describes the course as follows:
Common Elements of Knowledge--The aim of this course is to examine and analyze the structure of what we call knowledge, and thereby enable students to evaluate and understand what follows from their own, and the knowledge-claims of others. It is hoped that this course will also enable students to discover the conceptual, cultural, and normative assumptions underlying observations that may be visual, social, scientific or aesthetic. They will examine how theories and explanations are formulated, and what criteria are used in each case for accepting evidence.

According to Humphries, et al (8), the curriculum methods (Appendix P) for this course consist of four sequences. The course seeks to establish a connection between formal education and the student's personal life. Each sequence introduces the question with which it is concerned in relationship to the student's own experience, encouraging the student to explore solutions on his own, and only then presenting him with the reflections of philosophers on the subject.

The student is asked to question concepts he has received from school, college and society, and to analyze the basis for his acceptance or rejection of such concepts. The purpose of this approach is to enable students to understand the basis for the judgments that our lives require us to make.

Evaluation

A Thirteen-College Curriculum-type program involves two kinds of evaluation, according to Braithwaite (3). The first kind, called documentation, seeks to determine what is going
on in classrooms on a day-to-day basis. As opposed to writing beautiful curriculum units, documentation seeks to establish whether anything new and exciting in the classroom is actually happening as a result of the experimental approach. For the duration of the experiment, anecdotal or clinical material on classroom activities was gathered by the consultant agency from three sources—teachers, which constituted the main effort, students, and visitors to the campus from outside the program.

The second kind of evaluation seeks to compare the performance of Program and Regular students on certain variables, including standardized achievement and aptitude tests. For each generation of students in the Experimental Program, the American College Testing Program (ACT) and standardized tests by the Institute for Services to Education were administered at the start of the first year in college, the end of the first year, and the beginning of the second year. The close-out questionnaire, the "Senior Year Questionnaire," was administered to seniors the spring of the senior year. The measurement and analysis of results were based on a complex multivariate design which included dependent variables of academic ability, verbal and non-verbal skills, anxiety, and interpersonal preferences. Analysis was controlled by factors of the college attended, sex and participation in the program.
Evaluation of Experimental Program materials and practices has been an integral part of their development. Facts surrounding successive revisions of these materials and practices, which would have emphasized their developmental phases, however, have not been documented. Teachers have implemented evaluation by comparing notes on what they have been doing, and by coming to decisions during summer conferences and meetings held during the school year which possibly involve all of the faculty. Evaluation has taken place by visiting consultants as they observed classes on the campus, talked to students, and themselves tried out new ideas or demonstrated program ideas to teachers.

Evaluation has also been an integral part of the teachers' annual report of the year's experiences. Materials used have been listed: books, films, units, equipment; techniques used; services (such as secretaries and bookstores) used; and a description of their success or lack of success in each category. Included have been samples of student work, anecdotal accounts of particular classroom happenings, and a general appraisal of the program.

Student evaluation conferences have also been a part of the program. Such a conference was organized and conducted by the Institute for Services to Education in the spring of 1969 at the end of the academic year and lasted for four days. Each college was represented by two or three students
who were elected to this post by popular vote. Representatives were instructed to conduct a survey of their peers for viewpoints on the program. During the conference, the staff of the Institute for Services to Education and the students went over the Experimental Program course by course, book by book, unit by unit. The results contributed as a feedback of ideas for the further development of the curriculum and materials.

Occasions of visitations by persons outside the Experimental Program personnel have been used in the Thirteen-College Curriculum Program. Under arrangements with the United States Office of Economic Opportunity, a half-dozen consultants outside Experimental Program personnel hired by the agency have visited the Experimental Programs on the different campuses and have reported directly to the agency and to the Institute for Services to Education. At the end of the academic years in which this was done, 1968 and 1969, the Institute for Services to Education met with the agency people and with the visitors. The reports dealt in detail with particular aspects of the program and also contributed as a feedback of ideas for the further development of the program.
CHAPTER BIBLIOGRAPHY


CHAPTER III

PROCEDURES OF THE STUDY

Study Design

Problem of the Study

The problem of this study was to determine if the two curriculum programs at Bishop College were any different in effect upon students as measured by: (a) Undergraduate Academic Performance, (b) Senior-Year Concepts of Academic Experience, (c) Post-Graduate Concepts of Undergraduate Academic Experiences, (d) Senior-Year Concepts of Self, (e) Post-Graduate Concepts of Self, (f) Post-Graduate Occupational Professionalism, and (g) Post-Graduate Continuation of Professional Development.

To implement the problem of the study, hypotheses were formulated as well as procedures for collection of data. A survey instrument was made, validated and issued to selected graduates who were participating students in the two curriculum programs at Bishop College at the beginning of the curriculum experiment, Fall of 1967.

Purpose of the Study

The purpose of this study was to compare students in areas delineated by the problem, in an attempt to assess
to one of the two curriculum programs a degree of greater effectiveness as measured by students' undergraduate and post-graduate achievement.

Selection of Students

Criteria for the selection of subjects for this study were as follows:

The subjects were Bishop College Graduates (1) who were black Participating Students in the Experimental Curriculum Program at Bishop College; (2) who entered Bishop College as freshmen in September, 1967; (3) who graduated from Bishop College by August, 1973; and (4) who had current addresses listed with the Development Office of the College.

Of the one hundred 1967 entering Freshmen who were randomly selected by the Experimental Program Office as Program Students, one graduated in 1970, nineteen graduated in 1971, fifteen graduated in 1972 and two by August, 1973. Three were still enrolled in Bishop College, leaving an attrition of fifty-nine or 59 per cent. Based upon the five-to-six years average that most black students use to graduate, the First Generation of Program Graduates was considered as forty-one in number.

Of these forty-one Program Graduates, one was Chicano and two did not have current addresses listed with the College.
Of the 197 entering 1967 Freshmen who were randomly selected by the Experimental Program Office as Control Students, one graduated in 1970, forty-three graduated in 1971, eighteen graduated in 1972, and six by August, 1973. One was still enrolled in Bishop College, leaving an attrition of 128, or 65 per cent. Based upon the five-to-six years average for graduation, the First Generation of Control Graduates was considered as sixty-eight in number.

Of these sixty-eight Control Graduates, six did not have current addresses listed with the College.

According to the aforementioned criteria, the number of Participating Students eligible as subjects for this study were thirty-eight Program Group Students and sixty-two Control Group Students.

Each of the eligible First-Generation Graduates of these two groups were mailed a return postage-paid copy of the "Post-Graduate Questionnaire," with a cover letter explaining the importance of the survey. Data gathered from this survey included (1) post-graduate concepts of self and of undergraduate academic experiences; (2) occupational involvement, and occupational relationship to undergraduate professional preparation; and (3) continuing professional development on the post-graduate level.
Selection of Measurement Instruments

The measurement instruments selected for this study were: (a) Institutional Records, which include Graduate Record Examination scores; (b) the "Senior Year Questionnaire;" and (c) the "Post-Graduate Questionnaire."

1. Institution records consisted of entry and exit dates, the kind of curriculum followed, grade-point averages, and scores as a result of the Graduate Record Examination.

2. From the "Senior Year Questionnaire," 1971, forty-five statements were selected concerning students' attitudes towards undergraduate academic experiences, and twenty statements concerning students' self-concept.

3. The "Post-Graduate Questionnaire" consisted of three parts: (a) current occupational or graduate-study involvement; (b) twenty-five selected statements from the "Senior Year Questionnaire," 1971, concerning students' attitudes towards undergraduate academic experiences, and (c) twenty selected statements from the "Senior Year Questionnaire" concerning students' self-concepts.

The "Senior Year Questionnaire" was completed the Spring of 1971 by twenty-three Experimental Program Students, the Experimental Group, and by twenty-seven Regular Program Students, the Control Group. The statistical report of this test was obtained from the Institute for Services to Education for use in this study.
The "Post-Graduate Questionnaire" was completed in December, 1973, by twenty-eight Experimental Program Students, the Experimental Group, and by forty-three Regular Program Students, the Control Group.

The additional population who completed the "Post-Graduate Questionnaire" in 1973, who were not represented in the test data of the "Senior Year Questionnaire," 1971, completed the identical questionnaire within one semester of graduation, August, 1973. Names of students corresponding to the experimental post-facto data from the "Senior Year Questionnaire," 1971, were unretrievable, according to the Research Office of the Institute for Services to Education.

Collection of Data

Data were obtained by personal request and by personal presentation from (1) the Director of the Experimental Program at Bishop College, (2) the Counselor of the Experimental Program at Bishop College, and (3) the Director of Testing, Bishop College.

Data were obtained by postal and long-distance call requests from the Research Office of the Institute for Services to Education, Washington, D. C.

Data were obtained by postal survey of the Participating Students who entered Bishop College as freshmen in September, 1967, and who graduated by August, 1973.
Data were obtained by telephone, where possible, to reach more than a 50 per cent response from the Participating Students. These data were recorded on individual copies of the "Post-Graduate Questionnaire."

Treatment of Data

At the North Texas State University Computer Center the data were punched into cards for automatic data processing; then computations were made using formulas of the Computer Center.

Hypothesis 1.—was tested using the *z* test for the significance of the difference in two independent proportions to determine if graduation from college within four years after entry as a freshman student was independent of the group.

Hypothesis 2.—was tested using the *t* test for two independent samples to determine if academic achievement was independent of the group.

Hypothesis 3.—was tested using the *t* test for two independent samples to determine if academic achievement was independent of the group.

Hypothesis 4.—was tested using the *t* test for two independent samples to determine if academic achievement was independent of the group.

Hypothesis 5.—was tested using the chi-square test for two independent samples to determine if response was
independent of the group.

Hypothesis 6.--was tested using the chi-square test for two independent samples to determine if response was independent of the group.

Hypothesis 7.--was tested using the chi-square test of goodness-of-fit for two related groups to determine if response was independent of time.

Hypothesis 8.--was tested using the chi-square test of goodness-of-fit for two related groups to determine if response was independent of time.

Hypothesis 9.--was tested using the chi-square test for two independent samples to determine if response was independent of the group.

Hypothesis 10.--was tested using the chi-square test for two independent samples to determine if response was independent of the group.

Hypothesis 11.--was tested using the chi-square test of goodness-of-fit for two related samples to determine if response was independent of time.

Hypothesis 12.--was tested using the chi-square test of goodness-of-fit for two related samples to determine if response was independent of time.

Hypothesis 13.--was tested using the z test for the significance of the difference in two proportions to determine if attainment of Occupational Professionalism was independent of the group.
Hypothesis 14.--was tested using the \( z \) test for the significance of the difference in two proportions, to determine if involvement in continuation of professional development in the graduate school or a professional school of an institution of higher learning was independent of the group.

Analysis of the test of each hypothesis was made, and findings concerning the tenability of the hypothesis given subsequent to the test data. Additional findings were listed separately.
CHAPTER IV

ANALYSIS OF DATA

Findings Relative to Hypotheses

Hypothesis One

1. There will be no significant difference in the percentage of students in Group A and the percentage of students in Group B who have graduated within four consecutive academic years from the beginning of the experiment (Table 1).

<table>
<thead>
<tr>
<th>Group</th>
<th>N1</th>
<th>N2</th>
<th>Percentage of N1</th>
<th>Z</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100</td>
<td>20</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>197</td>
<td>44</td>
<td>22</td>
<td>-0.4630</td>
<td>*</td>
</tr>
</tbody>
</table>

A - Experimental Group  
B - Control Group  

N1 - Number Enrolled  
N2 - Number of Four-Year Graduates

*No Significant Difference
Table I shows that when Group A and Group B were compared on the percentage of graduates within four years, no significant difference was found between the two groups. The percentage of Group A graduates was 20, and the percentage of Group B graduates was 22.

The $z$ score obtained for testing the significance of the difference in two independent proportions was -0.4630, which did not attain the $z$ value of $\pm 1.96$ at the .05 level of probability, and therefore, did not evidence statistical significance.

The null hypothesis was not rejected; therefore, for these two groups, attainment of graduation from college within four years after entry as a freshman was probably independent of the group.

**Hypothesis Two**

There will be no significant difference between the mean cumulative grade-point average (CGPA) of Group A and that of Group B (Table II).

Table II shows that when Group A and Group B were compared on the mean cumulative grade-point averages, no significant difference was found between the two groups. The mean grade-point averages for Group A was 2.74947, and the standard deviation was .4742. The mean grade-point average for Group B was 2.67765, and the standard deviation was .40505.
TABLE II

COMPARISON OF TWO INDEPENDENT GROUPS ON ACADEMIC ACHIEVEMENT MEASURED BY THE CUMULATIVE GRADE-POINT AVERAGE

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>t</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>38</td>
<td>2.74947</td>
<td>.47442</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>68</td>
<td>2.67765</td>
<td>.40505</td>
<td>.8228</td>
<td>*</td>
</tr>
</tbody>
</table>

A - Experimental Group
B - Control Group

N - Total Number of Graduates
* - No Significant Difference

The t score obtained for testing the significance of the difference between the two means was .8228, which did not attain the t value of +2.37 at the .05 level of probability, and therefore did not evidence statistical significance.

The null hypothesis was not rejected; therefore, academic achievement for these two groups, as measured by the cumulative grade-point average, was probably independent of the group.

Hypothesis Three

There will be no significant difference between the mean grade score of Group A and that of Group B in advanced
courses in (1) mathematics (Table III), and (2) science (Table IV).

TABLE III

COMPARISON OF TWO INDEPENDENT GROUPS
ON ACADEMIC ACHIEVEMENT IN
ADVANCED MATHEMATICS COURSES

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>t</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5</td>
<td>2.46600</td>
<td>.36432</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>4</td>
<td>3.06500</td>
<td>.63364</td>
<td>-1.7934</td>
<td>*</td>
</tr>
</tbody>
</table>

A - Experimental Group   N - Total Number of Graduates
B - Control Group        * - No Significant Difference

Table III shows that, when the Experimental Group and the Control Group were compared on the mean grade-point average in advanced courses in mathematics, no significant difference was found between the two groups. The mean grade-point average for the Experimental Group was 2.46600, and the standard deviation was .36432. The mean grade-point average for the Control Group was 3.06500, and the standard deviation was .63364.

The $t$ score for testing the significance of the difference between the two means was -1.7934, which did not
attain the $t$ value of $+2.37$ at the .05 level of probability, and therefore did not evidence statistical significance.

The null hypothesis was not rejected; therefore, academic achievement for these two groups, as measured by the mean grade-point average in courses in advanced mathematics, was probably independent of the group.

**TABLE IV**

**COMPARISON OF TWO INDEPENDENT GROUPS ON ACADEMIC ACHIEVEMENT IN ADVANCED SCIENCE COURSES**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean G.P.A.</th>
<th>S.D.</th>
<th>$t$</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5</td>
<td>2.46000</td>
<td>.47744</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>4</td>
<td>3.03500</td>
<td>.71650</td>
<td>-1.4483</td>
<td>*</td>
</tr>
</tbody>
</table>

A - Experimental Group   N - Total Number of Graduates
B - Control Group        * - No Significant Difference

Table IV shows that, when the Experimental Group and the Control Group were compared on the mean grade-point average in advanced courses in science, no significant difference was found between the two groups. The mean grade-point average for the Experimental Group was 2.46000 and the standard deviation was .47744. The mean grade-point average for the Control Group was 3.03500, and the
The $t$ score for testing the significance of the difference between the two means was -1.4483, which did not attain the $t$ value of +2.37 at the .05 level of probability and therefore did not evidence statistical significance.

The null hypothesis was not rejected; therefore, academic achievement for these two groups, as measured by the mean grade-point average in courses in advanced science, was probably independent of the group.

**Hypothesis Four**

There will be no significant difference between the mean combined score of Group A and that of Group B on the Graduate Record Examination (Table V).

Table V shows that when the Experimental Group and the Control Group were compared on the mean combined score of the Graduate Record Examination, no significant difference was found between the groups. The mean combined score for the Control Group was 586.48649 and the standard deviation was 113.63236.

The $t$ score for testing the significance of the difference between the two means, was 2.5642, which did not attain the $t$ value of +2.37 at the .05 level of probability, and therefore did not evidence statistical significance.
TABLE V

COMPARISON OF TWO INDEPENDENT GROUPS FOR PERFORMANCE ON THE GRADUATE RECORD EXAMINATION

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>t</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>24</td>
<td>667.08333</td>
<td>129.16047</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>37</td>
<td>586.48649</td>
<td>113.63236</td>
<td>-2.5642 *</td>
<td></td>
</tr>
</tbody>
</table>

A - Experimental Group  
B - Control Group  
N - Total Number of Graduates  
* - No Significant Difference

The null hypothesis was not rejected; therefore, academic achievement for these two groups, as measured by the mean combined score of the Graduate Record Examination, was probably independent of the group.

Hypothesis Five

There will be no significant difference between the frequency of response of Group A and that of Group B to each of selected statements on the "Senior Year Questionnaire" that pertain to academic experiences (Table VI).

Table VI gives a summary of the $X^2$ values and the description of the significance at the .05 level of probability for each of twenty selected statements.
### TABLE VI

**SUMMARY OF CHI-SQUARE VALUES FOR COMPARISON OF TWO INDEPENDENT GROUPS FOR INDEPENDENCE OF RESPONSE TO STATEMENTS ON ACADEMIC EXPERIENCES**

<table>
<thead>
<tr>
<th>Statement</th>
<th>$X^2$</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.10967</td>
<td>*</td>
</tr>
<tr>
<td>2</td>
<td>2.63975</td>
<td>*</td>
</tr>
<tr>
<td>3</td>
<td>6.93593</td>
<td>SD</td>
</tr>
<tr>
<td>4</td>
<td>2.70051</td>
<td>*</td>
</tr>
<tr>
<td>5</td>
<td>3.59463</td>
<td>*</td>
</tr>
<tr>
<td>6</td>
<td>0.39161</td>
<td>*</td>
</tr>
<tr>
<td>7</td>
<td>0.86830</td>
<td>*</td>
</tr>
<tr>
<td>8</td>
<td>0.57255</td>
<td>*</td>
</tr>
<tr>
<td>9</td>
<td>3.54173</td>
<td>*</td>
</tr>
<tr>
<td>10</td>
<td>4.19067</td>
<td>*</td>
</tr>
<tr>
<td>11</td>
<td>1.06141</td>
<td>*</td>
</tr>
<tr>
<td>12</td>
<td>0.86304</td>
<td>*</td>
</tr>
<tr>
<td>13</td>
<td>3.60762</td>
<td>*</td>
</tr>
<tr>
<td>14</td>
<td>4.65653</td>
<td>*</td>
</tr>
<tr>
<td>15</td>
<td>2.29883</td>
<td>*</td>
</tr>
<tr>
<td>16</td>
<td>0.21388</td>
<td>*</td>
</tr>
<tr>
<td>17</td>
<td>0.40990</td>
<td>*</td>
</tr>
<tr>
<td>18</td>
<td>0.37656</td>
<td>*</td>
</tr>
<tr>
<td>19</td>
<td>0.94715</td>
<td>*</td>
</tr>
<tr>
<td>20</td>
<td>0.04594</td>
<td>*</td>
</tr>
</tbody>
</table>

* - No Significant Difference  
SD - Significant Difference
pertaining to academic experiences that appeared on the "Senior Year Questionnaire." When the frequency of response by the Experimental Group was compared with that of the Control Group, no significant difference was found between the two groups. The $X^2$ value for each statement was obtained by comparing the four observed responses by the Control Group with the four expected responses by the Experimental Group.

Of the twenty statements, statement number three, only, reached beyond the tabular $X^2$ value of +5.99 at the .05 level of probability, with an obtained $X^2$ value of 6.93593. A significant probability obtained in one statement out of twenty, however, could have occurred through chance error, and was therefore insufficient to establish that any difference existed between the two groups.

The null hypothesis was not rejected; therefore, response to statements on the "Senior Year Questionnaire" that pertain to academic experiences was probably independent of the group.

**Hypothesis Six**

There will be no significant difference between the frequency of response by Group A and that by Group B to each statement on the "Post-Graduate Questionnaire" that pertains to undergraduate academic experiences (Table VII).
TABLE VII

SUMMARY OF CHI-SQUARE VALUES FOR COMPARISON OF
TWO INDEPENDENT GROUPS FOR INDEPENDENCE OF
RESPONSE TO STATEMENTS ON UNDERGRADUATE
ACADEMIC EXPERIENCES

<table>
<thead>
<tr>
<th>Statement</th>
<th>$X^2$</th>
<th>Significance at .05 Level</th>
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<td>1</td>
<td>2.36832</td>
<td>*</td>
</tr>
<tr>
<td>2</td>
<td>2.57405</td>
<td>*</td>
</tr>
<tr>
<td>3</td>
<td>1.43904</td>
<td>*</td>
</tr>
<tr>
<td>4</td>
<td>1.93442</td>
<td>*</td>
</tr>
<tr>
<td>5</td>
<td>2.82756</td>
<td>*</td>
</tr>
<tr>
<td>6</td>
<td>0.00585</td>
<td>*</td>
</tr>
<tr>
<td>7</td>
<td>2.52008</td>
<td>*</td>
</tr>
<tr>
<td>8</td>
<td>0.75012</td>
<td>*</td>
</tr>
<tr>
<td>9</td>
<td>1.01999</td>
<td>*</td>
</tr>
<tr>
<td>10</td>
<td>0.64307</td>
<td>*</td>
</tr>
<tr>
<td>11</td>
<td>1.59829</td>
<td>*</td>
</tr>
<tr>
<td>12</td>
<td>0.57209</td>
<td>*</td>
</tr>
<tr>
<td>13</td>
<td>0.42121</td>
<td>*</td>
</tr>
<tr>
<td>14</td>
<td>0.17781</td>
<td>*</td>
</tr>
<tr>
<td>15</td>
<td>6.38161</td>
<td>SD</td>
</tr>
<tr>
<td>16</td>
<td>4.69949</td>
<td>*</td>
</tr>
<tr>
<td>17</td>
<td>3.23240</td>
<td>*</td>
</tr>
<tr>
<td>18</td>
<td>0.31136</td>
<td>*</td>
</tr>
<tr>
<td>19</td>
<td>0.63374</td>
<td>*</td>
</tr>
<tr>
<td>20</td>
<td>0.26057</td>
<td>*</td>
</tr>
</tbody>
</table>

* - No Significant Difference  
SD - Significant Difference

Table VII gives a summary of the $X^2$ values, the description of significance at the .05 level for each of twenty statements pertaining to undergraduate academic experiences that appeared on the "Post-Graduate Questionnaire." When the frequency of response by the Experimental
Group was compared with that of the Control Group, no significant difference was found between the two groups. The $X^2$ for each statement was obtained by comparing the four observed responses of the Control Group with the four expected responses of the Experimental Group.

Of the twenty statements, statement number fifteen, only, showed a difference in response by the two groups, reaching beyond the tabular $X^2$ value of +5.99 at the .05 level of probability with an obtained $X^2$ value of 6.38161. A significant probability obtained in one statement out of twenty could have been occurred through chance error, and was therefore insufficient to establish that any difference existed between the two groups.

The null hypothesis was not rejected; therefore, response to the statements on the "Post-Graduate Questionnaire," that pertain to undergraduate academic experiences was probably independent of the group.

**Hypothesis Seven**

There will be no significant difference between the frequency of response by Group A to each of selected statements on the "Senior Year Questionnaire" that pertain to academic experiences and the frequency of response by the same Group A to each of the same statements on the "Post-Graduate Questionnaire" (Table VIII).
### TABLE VIII

**SUMMARY OF CHI-SQUARE VALUES FOR TESTS OF GOODNESS-OF-FIT (NO DIFFERENCE) BETWEEN TWO RELATED GROUPS FOR TIME-INDEPENDENCE OF RESPONSE TO STATEMENTS ON ACADEMIC EXPERIENCES**

<table>
<thead>
<tr>
<th>Statement</th>
<th>$X^2$</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.45749</td>
<td>*</td>
</tr>
<tr>
<td>2</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2.09285</td>
<td>*</td>
</tr>
<tr>
<td>4</td>
<td>8.98760</td>
<td>SD</td>
</tr>
<tr>
<td>5</td>
<td>0.26580</td>
<td>*</td>
</tr>
<tr>
<td>6</td>
<td>3.29805</td>
<td>*</td>
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<tr>
<td>7</td>
<td>1.42764</td>
<td>*</td>
</tr>
<tr>
<td>8</td>
<td>1.67375</td>
<td>*</td>
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<tr>
<td>9</td>
<td>0.90902</td>
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<tr>
<td>10</td>
<td>3.41945</td>
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<td>11</td>
<td>1.07595</td>
<td>*</td>
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<tr>
<td>12</td>
<td>2.76815</td>
<td>*</td>
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<td>13</td>
<td>30.77832</td>
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<td>14</td>
<td>14.42693</td>
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<tr>
<td>15</td>
<td>0.91837</td>
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<tr>
<td>16</td>
<td>7.92615</td>
<td>SD</td>
</tr>
<tr>
<td>17</td>
<td>7.52172</td>
<td>SD</td>
</tr>
<tr>
<td>18</td>
<td>0.13386</td>
<td>*</td>
</tr>
<tr>
<td>19</td>
<td>17.53011</td>
<td>SD</td>
</tr>
<tr>
<td>20</td>
<td>5.84315</td>
<td>*</td>
</tr>
</tbody>
</table>

* - No Significant Difference  
** - One or more frequencies were less than or equal to zero  
SD - Significant Difference
Table VIII gives a summary of the \( X^2 \) values and the description of significance at the .05 level for each of twenty statements pertaining to academic experiences that appeared on both the "Senior Year Questionnaire" and the "Post-Graduate Questionnaire." When the frequency of response by the Experimental Group to selected statements on the "Senior Year Questionnaire" was compared with the frequency of the response of the same group to the identical statements on the "Post-Graduate Questionnaire," it was found that a significant difference probably existed between the two response samples. The \( X^2 \) for each of these statements was obtained by comparing the four observed responses and the four expected responses of the Experimental Group as they occurred as time samples on the "Senior Year Questionnaire," and the "Post-Graduate Questionnaire."

A comparison of the responses on the two questionnaires evidenced that six statements, numbers 4, 13, 14, 16, 17 and 19 reached beyond the tabular \( X^2 \) value of +5.99 at the .05 level of probability. Statement four obtained the \( X^2 \) value of 8.98760; statement thirteen, 30.77832; statement sixteen, 7.92615; statement seventeen, 7.52172; and statement nineteen, 17.53011. A significant probability level obtained in six statements out of twenty evidenced that a difference probably existed between the two response samples.
The null hypothesis was rejected; therefore, response of the Experimental Group was probably dependent upon time.

**Hypothesis Eight**

There will be no significant difference between the frequency of response of Group B to each of selected statements on the "Senior Year Questionnaire" that pertain to academic experiences and the frequency of response of the same Group B to each of the same statements on the "Post-Graduate Questionnaire" (Table IX).

Table IX gives a summary of the $X^2$ values and the description of significance at the .05 level for each of twenty statements pertaining to academic experiences that appeared on both the "Senior Year Questionnaire" and the "Post-Graduate Questionnaire." When the frequency of response by the Control Group to selected statements on the "Senior Year Questionnaire" was compared with the frequency of response of the same group to the identical statements on the "Post-Graduate Questionnaire," it was found that a significant difference probably existed between the two response samples. The $X^2$ for each of these statements was obtained by comparing the four observed responses and the four expected responses of the Control Group as they occurred as time samples on the "Senior Year Questionnaire" and the "Post-Graduate Questionnaire."
TABLE IX

SUMMARY OF CHI-SQUARE VALUES OF TESTS OF GOODNESS-OF-FIT (NO DIFFERENCE) BETWEEN TWO RELATED SAMPLES FOR TIME-INDEPENDENCE OF RESPONSE TO STATEMENTS ON ACADEMIC EXPERIENCES

<table>
<thead>
<tr>
<th>Statement</th>
<th>$X^2$</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9.92694</td>
<td>SD</td>
</tr>
<tr>
<td>2</td>
<td>3.87977</td>
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</tr>
<tr>
<td>3</td>
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<td>SD</td>
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<tr>
<td>4</td>
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<td>SD</td>
</tr>
<tr>
<td>5</td>
<td>5.66222</td>
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<td>6</td>
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<td>7</td>
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</tr>
<tr>
<td>8</td>
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<tr>
<td>9</td>
<td>33.95242</td>
<td>SD</td>
</tr>
<tr>
<td>10</td>
<td>6.77244</td>
<td>SD</td>
</tr>
<tr>
<td>11</td>
<td>6.74617</td>
<td>SD</td>
</tr>
<tr>
<td>12</td>
<td>1.55346</td>
<td>*</td>
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<tr>
<td>13</td>
<td>10.11500</td>
<td>SD</td>
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<tr>
<td>14</td>
<td>10.84187</td>
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</tr>
<tr>
<td>15</td>
<td>11.16894</td>
<td>SD</td>
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<td>19.67009</td>
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<td>0.70064</td>
<td>*</td>
</tr>
<tr>
<td>19</td>
<td>65.01320</td>
<td>SD</td>
</tr>
<tr>
<td>20</td>
<td>13.02923</td>
<td>SD</td>
</tr>
</tbody>
</table>

SD - Significant Difference
* - No Significant Difference
A comparison of the responses on the two questionnaires evidence that thirteen statements, numbers 1, 3, 4, 9, 10, 11, 13-17, 19 and 20, reached beyond the $X^2$ value of 5.99 at the .05 level of probability. Statement one obtained the $X^2$ value of 9.92694; statement three, 71.15366; statement four, 10.56346; statement nine, 33.95242; statement ten, 6.77244; statement eleven, 6.74617; statement thirteen, 10.11500; statement fourteen, 10.84187; statement fifteen, 11.16894; statement sixteen, 19.67009; statement seventeen, 17.63730; statement nineteen, 65.01320; and statement twenty, 13.02923. A significant probability level obtained in thirteen statements out of twenty evidenced that a difference probably existed between the two response samples.

The null hypothesis was rejected; therefore response of the Control Group was probably dependent upon time.

**Hypothesis Nine**

There will be no significant difference between the frequency of response of Group A and that of Group B to each of selected statements on the "Senior Year Questionnaire" that pertain to concepts of self.

Table X gives a summary of the $X^2$ values and the description of the significance at the .05 level of probability for each of twenty-five selected statements that pertain to concepts of self that appeared on the "Senior Year
When the frequency of response by the Experimental Group was compared with that of the Control Group, no significant difference was found between the two groups. The $X^2$ value for each statement was obtained by comparing the four observed of the Control Group with the four expected responses by the Experimental Group.

Of the twenty-five statements, statement number ten, only, reached beyond the tabular $X^2$ value of 5.99, at the .05 level of probability, with an obtained $X^2$ value of 9.82143. A significant probability obtained in one statement out of twenty-five could have occurred through chance error; and was therefore insufficient to establish that any difference existed between the two groups.

The null hypothesis was not rejected; therefore, response to statements on the "Senior Year Questionnaire" that pertain to academic experiences was probably independent of the group.

**Hypothesis Ten**

There will be no significant difference between the frequency of response of Group A and that of Group B to each statement on the "Post-Graduate Questionnaire" that pertains to concepts of self (Table XI).
TABLE X

SUMMARY OF CHI-SQUARE VALUES FOR COMPARISON OF TWO INDEPENDENT GROUPS FOR INDEPENDENCE OF RESPONSE TO STATEMENTS ON CONCEPTS OF SELF

<table>
<thead>
<tr>
<th>Statement</th>
<th>$X^2$</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.89940</td>
<td>*</td>
</tr>
<tr>
<td>2</td>
<td>3.32094</td>
<td>*</td>
</tr>
<tr>
<td>3</td>
<td>2.56005</td>
<td>*</td>
</tr>
<tr>
<td>4</td>
<td>0.77609</td>
<td>*</td>
</tr>
<tr>
<td>5</td>
<td>0.44744</td>
<td>*</td>
</tr>
<tr>
<td>6</td>
<td>0.87055</td>
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<td>7</td>
<td>1.20119</td>
<td>*</td>
</tr>
<tr>
<td>8</td>
<td>1.27764</td>
<td>*</td>
</tr>
<tr>
<td>9</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>9.82143</td>
<td>SD</td>
</tr>
<tr>
<td>11</td>
<td>0.34538</td>
<td>*</td>
</tr>
<tr>
<td>12</td>
<td>4.03827</td>
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</tr>
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<td>13</td>
<td>0.18384</td>
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<td>1.28971</td>
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<td>15</td>
<td>0.18116</td>
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<tr>
<td>16</td>
<td>4.67596</td>
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<tr>
<td>18</td>
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<td>19</td>
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<td>1.27058</td>
<td>*</td>
</tr>
<tr>
<td>22</td>
<td>1.29279</td>
<td>*</td>
</tr>
<tr>
<td>23</td>
<td>2.77019</td>
<td>*</td>
</tr>
<tr>
<td>24</td>
<td>4.53699</td>
<td>*</td>
</tr>
<tr>
<td>25</td>
<td>3.25110</td>
<td>*</td>
</tr>
</tbody>
</table>

SD - Significant Difference
*  - No Significant Difference
** - One or more expected frequencies were less than or equal to zero.
Table XI gives a summary of the $X^2$ values, the description of significance at the .05 level for each of twenty-five statements pertaining to concepts of self that appeared on both the "Senior Year Questionnaire" and the "Post-Graduate Questionnaire." When the frequency of response by the Experimental Group was compared with that of the Control Group, no significant difference was found between the two groups. The $X^2$ for each statement was obtained by comparing the four observed responses of the Control Group with the four expected responses of the Experimental Group.

Of the twenty-five statements, statement number seventeen only, showed a difference in response by the two groups, reaching beyond the tabular $X^2$ value of 5.99 at the .05 level of probability with an obtained $X^2$ value of 8.34876. A significant probability obtained in one statement out of twenty-five could have occurred through chance error; and was therefore insufficient to establish that any difference existed between the two groups.

The null hypothesis was not rejected; therefore response to the statements on the "Post-Graduate Questionnaire" that pertains to concepts of self was probably independent of the group.

Hypothesis Eleven

There will be no significant difference between the frequency of response of Group A to each of selected
statements on the "Senior Year Questionnaire" that pertain to concepts of self, and the frequency of response of the same Group A to each of the same statements on the "Post-Graduate Questionnaire" (Table XII).

### TABLE XI

SUMMARY OF CHI-SQUARE VALUES FOR COMPARISON OF TWO INDEPENDENT GROUPS FOR INDEPENDENCE OF RESPONSE TO STATEMENTS ON CONCEPTS OF SELF

<table>
<thead>
<tr>
<th>Statement</th>
<th>$X^2$</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.22195</td>
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</tr>
<tr>
<td>2</td>
<td>2.84780</td>
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<tr>
<td>3</td>
<td>5.31919</td>
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<tr>
<td>4</td>
<td>2.26133</td>
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</tr>
<tr>
<td>5</td>
<td>0.64359</td>
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<tr>
<td>6</td>
<td>2.55991</td>
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<tr>
<td>7</td>
<td>1.00328</td>
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<tr>
<td>8</td>
<td>0.75086</td>
<td>*</td>
</tr>
<tr>
<td>9</td>
<td>1.25878</td>
<td>*</td>
</tr>
<tr>
<td>10</td>
<td>3.98277</td>
<td>*</td>
</tr>
<tr>
<td>11</td>
<td>1.07271</td>
<td>*</td>
</tr>
<tr>
<td>12</td>
<td>0.23700</td>
<td>*</td>
</tr>
<tr>
<td>13</td>
<td>0.33947</td>
<td>*</td>
</tr>
<tr>
<td>14</td>
<td>4.06905</td>
<td>*</td>
</tr>
<tr>
<td>15</td>
<td>0.05146</td>
<td>*</td>
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<td>16</td>
<td>0.55877</td>
<td>*</td>
</tr>
<tr>
<td>17</td>
<td>8.34876</td>
<td>SD</td>
</tr>
<tr>
<td>18</td>
<td>1.38242</td>
<td>*</td>
</tr>
<tr>
<td>19</td>
<td>1.21871</td>
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<td>*</td>
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<tr>
<td>21</td>
<td>2.12731</td>
<td>*</td>
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<tr>
<td>22</td>
<td>0.15204</td>
<td>*</td>
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<tr>
<td>23</td>
<td>0.58658</td>
<td>*</td>
</tr>
<tr>
<td>24</td>
<td>0.05146</td>
<td>*</td>
</tr>
<tr>
<td>25</td>
<td>0.09617</td>
<td>*</td>
</tr>
</tbody>
</table>

SD - Significant Difference
* - No Significant Difference
Table XII gives a summary of the $X^2$ values and the description of significance at the .05 level for each of twenty-five statements pertaining to concepts of self that appeared on both the "Senior Year Questionnaire" and the "Post-Graduate Questionnaire." When the frequency of response by the Experimental Group on the "Senior Year Questionnaire" was compared with the frequency of response of the same group on the "Post-Graduate Questionnaire," it was found that a significant difference probably existed between the two response samples. The $X^2$ for each of these statements was obtained by comparing the four observed responses and the four expected responses of the Experimental Group as they occurred as time samples on the "Senior Year Questionnaire" and the "Post-Graduate Questionnaire."

A comparison of the responses on the two questionnaires evidenced that nine statements, numbers 3-7, 11, 13, 15 and 21, reached beyond the tabular $X^2$ value of 5.99 at the .05 level of probability. Statement three obtained the $X^2$ value of 17.54816; statement four, 21.76227; statement five, 14.89353; statement six, 38.58650; statement seven, 22.28000; statement eleven, 43.40462; statement thirteen, 16.28539; statement fifteen, 6.91441; and statement twenty-one, 6.71886.

A significant probability level obtained in nine statements out of twenty-five evidenced that a difference probably existed between the two response sample groups.
TABLE XII

SUMMARY OF CHI-SQUARE VALUES FOR TESTS OF GOODNESS-OF-FIT (NO DIFFERENCE) BETWEEN TWO RELATED GROUPS FOR TIME-INDEPENDENCE OF RESPONSE TO STATEMENTS ON CONCEPTS OF SELF

<table>
<thead>
<tr>
<th>Statement</th>
<th>$X^2$</th>
<th>Significance at .05 Level</th>
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<td>1</td>
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<td>14.89353</td>
<td>SD</td>
</tr>
<tr>
<td>6</td>
<td>38.58650</td>
<td>SD</td>
</tr>
<tr>
<td>7</td>
<td>22.28000</td>
<td>SD</td>
</tr>
<tr>
<td>8</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>43.40462</td>
<td>SD</td>
</tr>
<tr>
<td>12</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>16.28539</td>
<td>SD</td>
</tr>
<tr>
<td>14</td>
<td>3.53701</td>
<td>*</td>
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<td>15</td>
<td>6.91441</td>
<td>SD</td>
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<td>17</td>
<td>**</td>
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<td>18</td>
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<td>19</td>
<td>2.89635</td>
<td>*</td>
</tr>
<tr>
<td>20</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>6.71886</td>
<td>SD</td>
</tr>
<tr>
<td>22</td>
<td>0.68687</td>
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<td>23</td>
<td>1.14079</td>
<td>*</td>
</tr>
<tr>
<td>24</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>5.32623</td>
<td>*</td>
</tr>
</tbody>
</table>

SD - Significant Difference
* - No Significant Difference
** - One or more expected frequencies were less than or equal to zero.
The null hypothesis was rejected; therefore, response of the Experimental Group was probably independent of time.

**Hypothesis Twelve**

There will be no significant difference between the frequency of response of Group B to each of selected statements on the "Senior Year Questionnaire" that pertain to concepts of self and the frequency of response of the same Group B to each of the same statements on the "Post-Graduate Questionnaire."

Table XIII gives a summary of the $\chi^2$ values and the description of significance at the .05 level for each of the twenty-five statements pertaining to concepts of self that appeared on both the "Senior Year Questionnaire" and the "Post-Graduate Questionnaire." When the frequency of response by the Control Group on the "Senior Year Questionnaire" was compared with the frequency of response of the same group on the "Post-Graduate Questionnaire," a significant difference was found. The $\chi^2$ for each of these statements was obtained by comparing the four observed responses of the Control Group and the four expected responses of the same group as they occurred as time samples on the "Senior Year Questionnaire" and the "Post-Graduate Questionnaire."
TABLE XIII

SUMMARY OF CHI-SQUARE VALUES OF TESTS OF GOODNESS-OF-FIT (NO DIFFERENCE) BETWEEN TWO RELATED GROUPS FOR TIME-INDEPENDENCE OF RESPONSE TO STATEMENTS ON CONCEPTS OF SELF

<table>
<thead>
<tr>
<th>Statement</th>
<th>$x^2$</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
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<tr>
<td>2</td>
<td>15.88330</td>
<td>SD</td>
</tr>
<tr>
<td>3</td>
<td>27.79564</td>
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<td>4</td>
<td>115.93962</td>
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<td>5</td>
<td>17.13596</td>
<td>SD</td>
</tr>
<tr>
<td>6</td>
<td>40.14487</td>
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<td>8</td>
<td>44.58089</td>
<td>SD</td>
</tr>
<tr>
<td>9</td>
<td>**</td>
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<tr>
<td>10</td>
<td>24.79457</td>
<td>SD</td>
</tr>
<tr>
<td>11</td>
<td>21.72371</td>
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<td>12</td>
<td>13.79603</td>
<td>SD</td>
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<td>13</td>
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<td>14</td>
<td>38.98837</td>
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<td>15.63873</td>
<td>SD</td>
</tr>
<tr>
<td>21</td>
<td>12.03777</td>
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</tr>
<tr>
<td>22</td>
<td>0.86704</td>
<td>*</td>
</tr>
<tr>
<td>23</td>
<td>8.63791</td>
<td>SD</td>
</tr>
<tr>
<td>24</td>
<td>141.05920</td>
<td>SD</td>
</tr>
<tr>
<td>25</td>
<td>43.37949</td>
<td>SD</td>
</tr>
</tbody>
</table>

SD - Significant Difference
* - No Significant Difference
** - One or more expected frequencies were less than or equal to zero.
A comparison of the responses on the two questionnaires evidenced that twenty-three statements, all except numbers 9 and 22, reached beyond the tabular $X^2$ value of 5.99 at .05 level of probability. Number nine had no value at all, because one or more expected frequencies were less than or equal to zero. Number twenty-three obtained the $X^2$ value of 0.86704, which is less than the tabular value of $X^2$ value of 5.99. A significant probability level reached in twenty-three statements out of twenty-five evidenced that a difference existed between the two groups.

The null hypothesis was rejected; therefore, response of the Control Group was probably dependent upon time.

**Hypothesis Thirteen**

There will be no significant difference in the percentages of members of Group A and the percentage of members of Group B who will have attained Occupational Professionalism.

Table XIV shows that when the Experimental Group was compared with the Control Group on the percentage of graduates who attained occupational professionalism, no significant difference was found between the two groups. The percentage of the Experimental Group who attained Occupation Professionalism was .643 and the percentage of the Control Group who attained Occupational Professionalism was .605. The $z$ score obtained for testing the significance
of the difference in two independent proportions was .324 which did not attain the z value of \pm 1.96 at the .05 level of probability, and therefore, did not evidence statistical significance.

The null hypothesis was not rejected; therefore, for these two groups, attainment of Occupational Professionalism was independent of the group.

**TABLE XIV**

**COMPARISON OF TWO PROPORTIONS ON ATTAINMENT OF OCCUPATIONAL PROFESSIONALISM (OP)**

<table>
<thead>
<tr>
<th>Group</th>
<th>( N^1 )</th>
<th>( N^2 )</th>
<th>Percentage of ( N^1 )</th>
<th>( z )</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>28</td>
<td>18</td>
<td>.643</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>43</td>
<td>26</td>
<td>.605</td>
<td>.324</td>
<td>*</td>
</tr>
</tbody>
</table>

A - Experimental Group  
B - Control Group  
* - No Significant Difference

**Hypothesis Fourteen**

There will be no significant difference in the percentage of members of Group A and the percentage of members of Group B who are involved in a continuation of professional
development in a graduate school or professional school of an institution of higher learning.

TABLE XV

COMPARISON OF TWO PROPORTIONS ON INVOLVEMENT IN CONTINUATION OF PROFESSIONAL DEVELOPMENT (CPD)

<table>
<thead>
<tr>
<th>Group</th>
<th>( N^1 )</th>
<th>( N^2 )</th>
<th>Percentage of ( N^1 )</th>
<th>( z )</th>
<th>Significance at .05 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>28</td>
<td>8</td>
<td>.286</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>43</td>
<td>10</td>
<td>.233</td>
<td>.503</td>
<td>*</td>
</tr>
</tbody>
</table>

A - Experimental Group
B - Control Group
\( N^1 \) - Total Respondents
\( N^2 \) - Respondents involved
* - No Significant Difference in CPD

Table XV shows that the Experimental Group was compared with the Control Group on involvement in continuation of professional development, no significant difference was found between the two groups. The percentage of the Experimental Group who were involved in continuation of professional development was .286 and the percentage of the Control Group who were involved in continuation of professional development was .233. The \( z \) score obtained for testing the significance of the difference in two
independent proportions was .503, which did not attain the
$z$ value of $+1.96$ at the .05 level of probability, and
therefore, did not evidence statistical significance.

The null hypothesis was not rejected; therefore, for these two groups, involvement in continuation of professional development was independent of the group.
Summary of Findings Relative to Hypotheses

The findings are stated parallel to the hypotheses, which were tested in the null form:

1. No significant difference probably existed in the percentage of Experimental Curriculum Program students, and the percentage of Regular Curriculum Program students who graduated within four consecutive academic years from the beginning of the experiment; therefore, achievement of graduation within four years was probably independent of the curriculum followed.

2. No significant difference probably existed between the mean cumulative grade-point average (CGPA) of students in the Experimental Curriculum Program students and that of the Regular Curriculum Program students; therefore, general academic performance was probably independent of the curriculum followed.

3. No significant difference probably existed between the mean grade score of Experimental Curriculum Program students, and that of Regular Curriculum Program students in advanced courses in mathematics and science; therefore, academic performance in advanced courses in mathematics and science was probably independent of the curriculum followed.

4. No significant difference probably existed between the mean combined score of Experimental Curriculum Program
students, and that of Regular Curriculum Program students on the Graduate Record Examination (GRE); therefore, performance on this examination was probably independent of the curriculum followed.

5. No significant difference probably existed between the frequency of response of Experimental Curriculum Program students and that of Regular Curriculum Program students, to each of selected statements on the "Senior Year Questionnaire" that pertained to academic experiences; therefore, senior-year concepts of academic experiences were probably independent of the curriculum followed.

6. No significant difference probably existed between the frequency of response of Experimental Curriculum Program graduates, and that of Regular Curriculum Program graduates, to each statement on the "Post-Graduate Questionnaire" that pertained to undergraduate academic experiences; therefore, post-graduate concepts of undergraduate academic experiences were probably independent of the curriculum followed.

7. A significant difference probably existed between the frequency of response of Experimental Curriculum Program students to each of selected statements on the "Senior Year Questionnaire," and the frequency of response of Experimental Curriculum Program graduates, to each of the same statements on the "Post-Graduate Questionnaire" that
pertained to academic experiences; therefore, concepts of Experimental Program Graduates pertaining to undergraduate academic experiences were probably dependent upon time.

8. A significant difference probably existed between the frequency of response of Regular Curriculum Program students to each of selected statements on the "Senior Year Questionnaire" that pertained to academic experiences, and the frequency of response of Regular Curriculum Program graduates to each of the same statements on the "Post-Graduate Questionnaire;" therefore, concepts of Regular Curriculum Graduates pertaining to undergraduate academic experiences were probably dependent upon time.

9. No significant difference probably existed between the frequency of response of Experimental Curriculum Program students and that of Regular Curriculum students, to each of selected statements on the "Senior Year Questionnaire" that pertained to concepts of self; therefore, undergraduate concepts of self were probably independent of the group.

10. No significant difference probably existed between the frequency of response of Experimental Curriculum Program graduates and that of Regular Curriculum Program graduates, to each statement on the "Post-Graduate Questionnaire" that pertained to concepts of self; therefore, post-graduate concepts of self were probably independent of the group.
11. A significant difference probably existed between the frequency of response of Experimental Curriculum Program students to each of selected statements on the "Senior Year Questionnaire" that pertained to concepts of self, and the frequency of response of Experimental Curriculum Program graduates to each of the same statements on the "Post-Graduate Questionnaire;" therefore, self-concepts of Experimental Program Graduates were probably dependent upon time.

12. A significant difference probably existed between the frequency of response of Regular Curriculum Program students in response to each of selected statements on the "Senior Year Questionnaire" that pertained to concepts of self, and the frequency of response of Regular Curriculum Program graduates to each of the same statements on the "Post-Graduate Questionnaire;" therefore, self-concepts of Regular Curriculum Program Graduates were probably dependent upon time.

13. No significant difference probably existed in the percentage of Experimental Curriculum Program graduates and the percentage of Regular Curriculum Program graduates who had attained Occupational Professionalism; therefore, attainment of Occupational Professionalism was probably independent of the curriculum followed.
14. No significant difference probably existed in the percentage of Experimental Curriculum Program graduates and the percentage of Regular Curriculum Program graduates who were involved in a continuation of professional development in a graduate school or professional school of an institution of higher learning; therefore, continuation of professional development was probably independent of the curriculum followed.

Other Findings

1. The retention in Bishop College of the Experimental Curriculum Program students was 41 per cent of the original freshmen Experimental Curriculum Program group; and that of the Regular Curriculum Program students was 35 per cent of the original freshmen Regular Curriculum Program group.

2. Experimental Curriculum Program students evidenced a direction towards greater achievement in the cumulative grade-point average, and on the Graduate Record Examination (GRE).

3. Regular Curriculum Program students evidenced a direction towards greater achievement in courses in advanced mathematics and advanced science.

4. Experimental Curriculum Program students evidenced a direction towards attainment of a higher percentage of Occupational Professionalism.
5. Experimental Curriculum Program students evidenced a direction towards attainment of a higher percentage of involvement in continuation of professional development.


CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of the study was to make comparisons of selected groups of graduates from the Experimental Curriculum Program at Bishop College, in an attempt to assess to one of the programs a degree of greater effectiveness as measured by selected aspects of students' undergraduate and post-graduate achievement.

Research tended to indicate that there has been a pressing need for curriculum revision in the black college, innovations designed to overcome academic weaknesses of students through a focusing on individual interests, needs and strengths—in small classes especially oriented to student dialogue and activity. There is a dearth of literature on actual curriculum experimentation and revision in the black college.

The significance of this study was in the lack of any formal evaluation of the Experimental Curriculum Program on the Bishop College campus, and the need to validate the claims of the Experimental Program that Program Students have achieved superior attainments as compared to Regular
Curriculum Program Students.

Studies related to this research on Bishop College campus were evaluative of the Experimental Program only in the specific subject areas of Biology and Chemistry. Thirteen-College Curriculum Program Literature, as reports from the Institute for Services to Education, has been evaluative of combined consortia data, both as of the general program and as of some specific subject areas.

The data upon which this report was made were derived from Bishop College institutional records, data as the results of the exit questionnaire, the "Senior Year Questionnaire," and the instrument formulated and validated for this study, the "Post-Graduate Questionnaire." Experimental Program reports were obtained and long-distance conversations held with research officers at the Institute for Services to Education in Washington, D. C.; and a postal survey was made of students who met the criteria for eligibility for the study. Of the thirty-eight Experimental Curriculum Program graduates from an original 100 entering freshmen, twenty-eight responded to the questionnaire. Of the sixty-eight Regular Curriculum Program graduates from an original 197 entering freshmen, forty-three responded to the questionnaire.

Fourteen hypotheses were formulated for testing the significance of the difference between two means. The
statistics used were the \( z \) test, the \( t \) test, \( X^2 \) for two independent samples, and \( X^2 \) for two related samples. Computations were made at the North Texas State University Computer Center.

Findings

1. Tests of the statistical significance between two means showed that the two curriculum programs at Bishop College were probably no different in effect upon selected groups of graduates in the two curriculum programs (Hypotheses 1-6, 9, 10, 13, 14).

Experimental Curriculum Program Students evidenced a direction towards greater achievement, although not to a statistically significant degree, on:

a. the mean cumulative grade-point average (Hypothesis 2).

b. the mean combined score on the Graduate Record Examination (Hypothesis 4).

c. the percentage of students attaining Occupational Professionalism (Hypothesis 13).

d. the percentage of students involved in continuation of professional development.

Regular Curriculum Program students evidenced a direction towards greater achievement, although not to a statistically significant degree, on:
a. the percentage of students attaining graduation within four years (Hypothesis 1).
b. the mean grade-point average in courses in advanced mathematics and science (Hypothesis 3).

2. A comparison of the response of all Participating Students to identical statements on the two questionnaires, the "Senior Year Questionnaire" and the "Post-Graduate Questionnaire," showed that a difference in attitudes towards undergraduate academic experiences and self-concepts, had probably occurred within each group between the two time samples (Hypotheses 7, 8, 11, 12).

Participating Graduates from both curriculum programs expressed greater dissatisfaction than did Participating undergraduates with the Bishop College Curriculum in its lack of relevance to problems existant in the community (Appendix L, Part Two, Question 12).

Participating Graduates from both curriculum programs expressed the greater negative self-concept than did Participating undergraduates concerning:

a. the inability to express well one's ideas
b. the lack of desire to speak in public
c. the lack of desire to act on impulse, without a plan (Appendix L, Part Three, Questions 9, 17, 20).

3. At the end of six years the ability of the Experimental Curriculum Program for retention of students in
Bishop College was 41 per cent, as opposed to 35 per cent for the Regular Curriculum Program.

Thirty-five per cent of the Experimental Curriculum Program students graduated by August, 1972, five years after entering as freshmen; whereas 35 per cent of the Regular Curriculum Program students graduated by August, 1973, six years after entering as freshmen.

Conclusions

The findings of this research study have yielded the following conclusions:

1. The Experimental Curriculum Program has not attained a degree of greater efficiency that is statistically significant over the Regular Curriculum Program in the areas of (a) academic achievement, (b) concepts of self, and (c) postgraduate career involvement (Occupational Professionalism, and/or involvement in continuation of professional development in a graduate school or professional school of higher education).

2. Measurement that is more stringent than that utilized in this study could possibly reveal that the Experimental Curriculum Program Students attained greater achievement to a statistically significant degree in some areas.

3. Measurement that is more stringent than that utilized in this study could possibly reveal that the Regular Curriculum Program Students attained greater achievement to a statistically significant degree in some areas.
4. Time and post-graduate experiences have heightened the awareness of respondents to the "Post-Graduate Questionnaire" of the urgency of (a) relevancy of the curriculum to life situations and (b) self-confidence and adequate self-expression for self-actualization.

5. The Experimental Curriculum Program has achieved the higher percentage of student retention.

6. Measurement instruments of this study have not been adequate for determining causes for the difference in effect of the two curriculum programs upon student retention.

7. Through achievement of a higher percentage of student retention, the Experimental Curriculum Program has attained a degree of greater effectiveness over the Regular Curriculum Program at Bishop College.

Recommendations

It is recommended that:

1. An analysis be made of the Experimental Curriculum Program at Bishop College in an effort to determine factors which contribute to its increased retentive ability of students.

2. A comparison of Experimental Program Student retention and academic attainment be made with that of other colleges participating in the Experimental Curriculum Program.
3. Curriculum experiences establish increased relevancy with problems/situations in the community.

4. Curriculum experiences be designed to intensify development in students of (a) effective self-expression, and (b) increased self-confidence.

5. Curriculum analysis and development continue to be made on the Bishop College campus for the purpose of improving academic performance, concept of self, post-graduate career involvement as well as for increasing student retention.

6. The results of follow-up data on students who drop out be utilized in preventive counseling with students.

7. Findings in this study be observed by Bishop College and other black colleges and be used in the implementation of curriculum development.
APPENDIX A

THE THIRTEEN-COLLEGE CONSORTIUM

The Thirteen-College Consortium was established in 1966, first by mutual agreement among the thirteen predominantly black colleges, then by joint submission of a formal proposal to the United States Office of Education. Under the leadership of the Institute for Services to Education (ISE), it has developed and implemented the experimental curriculum program, The Thirteen-College Curriculum Program. The thirteen colleges are the following:

- Alabama A & M University, Huntsville, Alabama
- Bennett College, Greensboro, North Carolina
- Bishop College, Dallas, Texas
- Clark College, Atlanta, Georgia
- Florida A & M University, Tallahassee, Florida
- Jackson State College, Jackson, Mississippi
- Lincoln University, Lincoln University, Pennsylvania
- Norfolk State College, Norfolk, Virginia
- North Carolina A & T State University, Greensboro, N. C.
- Southern University, Baton Rouge, Louisiana
- Talladega College, Talladega, Alabama
- Tennessee A & I State University, Nashville, Tennessee
- Voorhees College, Denmark, South Carolina

A fourteenth college joined this consortium in 1968, although it is still called the Thirteen-College Consortium. The fourteenth member is Mary Holmes Junior College, West Point, Mississippi.
In 1973, the number of colleges participating in the Experimental Curriculum Program begun by these colleges has grown to thirty-eight, organized into several consortia. Still recognized as the TCC Program the curriculum experiment is still coordinated, directed and centrally evaluated by the Institute for Services to Education.

The Thirteen-College Curriculum Program has been supported from grants from: The Office of Education, Title III, Division of College Support; The Office of Education, Bureau of Research; The National Science Foundation, Division of Undergraduate Education; The Ford Foundation; The Carnegie Foundation; and The Esso Foundation.
APPENDIX B

THE INSTITUTE FOR SERVICES TO EDUCATION

The Institute for Services to Education, a non-profit organization, was incorporated in 1965, and received a basic grant from the Carnegie Corporation of New York. Founded on the principle that education today requires a fresh examination of what is worth teaching, and how to teach it, ISE undertakes a variety of educational tasks, working co-operatively with other educational institutions, and supported by grants from government agencies and private foundations. As a catalyst for curriculum change, ISE does not only produce educational materials or techniques that are innovative, it develops—in co-operation with teachers and administrators—procedures for effective installation of successful materials and techniques in the colleges.

ISE is headed by Dr. Elias Blake, Jr., a former teacher, and is staffed by college teachers with experience in working with disadvantaged youth both in predominantly black and predominantly white colleges and schools.

The Board of Directors consists of College and University educators who have histories of involvement in curriculum change. These directors are the following:
Vernon Alden  
Chairman of the Board  
The Boston Company  
Boston, Massachusetts

Herman Branson  
President  
Lincoln University

Kingman Brewster, Jr.  
President  
Yale University

Donald Brown  
The Center for Research on Learning and Teaching  
University of Michigan

Arthur P. Davis  
Graduate Professor in English  
Howard University

Carl J. Dolce  
Dean, School of Education  
North Carolina State University

Vivian Henderson  
President  
Clark College

Martin Jenkins  
Director  
Urban Affairs, ACE

Samuel Nabrit (Chairman)  
Executive Director  
Southern Fellowship Fund  
Atlanta, Georgia

Arthur Singer  
Vice-President  
Sloan Foundation  
New York, New York

Otis Singletary  
President  
University of Kentucky

C. Vann Woodward  
Professor of History  
Yale University
Stephen Wright
Vice-President of the Board
CEEB

Jerrold Zacharias
Professor of Physics
Massachusetts Institute of Technology
FACT SHEET ON PROGRAM STUDENTS AND A RANDOM SAMPLE OF REGULAR COLLEGE STUDENTS ENTERING TCCP COLLEGES IN THE FALL, 1967

continuance in College

<table>
<thead>
<tr>
<th>Program</th>
<th>Freshman Year</th>
<th>Sophomore Year</th>
<th>Junior Year</th>
<th>Senior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Entering</td>
<td>Withdraw</td>
<td>Entering</td>
<td>Withdraw</td>
</tr>
<tr>
<td>Number</td>
<td>1179</td>
<td>181</td>
<td>201</td>
<td>73</td>
</tr>
<tr>
<td>Withdraw (%)*</td>
<td>14.2%</td>
<td>19.9%</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Continuing (%)</td>
<td>100%</td>
<td>85.8%</td>
<td>69.7%</td>
<td>62.5%</td>
</tr>
<tr>
<td>Number</td>
<td>239**</td>
<td>248</td>
<td>155</td>
<td>436</td>
</tr>
<tr>
<td>Withdraw (%)*</td>
<td>29.6%</td>
<td>26.2%</td>
<td>9.6%</td>
<td></td>
</tr>
<tr>
<td>Continuing (%)</td>
<td>100%</td>
<td>76.4%</td>
<td>51.9%</td>
<td>46.9% ***</td>
</tr>
</tbody>
</table>

* Based upon the number continuing for each year independently
** 15% collected entering data on more than 2000 regular college students; a 33 percent stratified (by college) random sample was then collected for continuing assessment purposes.

COMPARATIVE GRADE-POINT-AVERAGES OF PROGRAM AND REGULAR STUDENTS ENTERING THE SENIOR YEAR

<table>
<thead>
<tr>
<th>Program</th>
<th>Freshman Year 1st Term**</th>
<th>Freshman Year 2nd Term**</th>
<th>Freshman Year Total**</th>
<th>Soph. Year Program Courses</th>
<th>Soph. Year New-Program Courses</th>
<th>Cumulative For Program Courses</th>
<th>Cumulative Through Soph. Year**</th>
<th>Junior Year Total</th>
<th>Cumulative Through Junior Year **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.55</td>
<td>2.56</td>
<td>2.55</td>
<td>2.58</td>
<td>2.38</td>
<td>2.55</td>
<td>2.50</td>
<td>2.41</td>
<td>2.49</td>
</tr>
<tr>
<td>S.D.</td>
<td>.61</td>
<td>.68</td>
<td>.61</td>
<td>.69</td>
<td>.99</td>
<td>.51</td>
<td>.49</td>
<td>.62</td>
<td>.53</td>
</tr>
<tr>
<td>Mean</td>
<td>2.14</td>
<td>2.19</td>
<td>2.16</td>
<td>----</td>
<td>2.33</td>
<td>----</td>
<td>2.29</td>
<td>2.41</td>
<td>2.36</td>
</tr>
<tr>
<td>S.D.</td>
<td>.68</td>
<td>.70</td>
<td>.61</td>
<td>----</td>
<td>.56</td>
<td>----</td>
<td>.49</td>
<td>.64</td>
<td>.48</td>
</tr>
</tbody>
</table>

# A Four-Point Scale (1-4.00)    * Significant difference at less than .05
** Significant difference at less than .01
*** A poll of administrators suggests this is an overestimate. We have discovered serious problems in the verification of the 839 students as being identical through four years due to record keeping in some colleges. Some people different from the original 839 flowing into the sample may have inflated the percentage. A study of transcripts will clear up this problem.
APPENDIX D

SUPERIOR OUTCOMES OF PROGRAM STUDENTS

Quantifiable areas where the Program students (Generation I, entering Fall, 1967) have shown superior outcomes as compared to their peers include the following:

1. *Retention in College* — more than 60% of the Program students who entered college in 1967 are approaching graduation or have graduated as compared to approximately 45% of the regular college students;

2. *Performance in College* — Program Student Grade Performance has generally been significantly better than regular college students (significance varies from $p < .01$ to $p < .05$);

3. *General Verbal Abilities and Skills* — Program students have shown consistently higher gains on a general test of verbal ability after both the Freshman and Sophomore years (significance varies from $p < .01$ to $p < .10$);

4. *Increased Valuing of Independence* — Program students have shown marked, significant gains in this personality trait as compared to regular college students as measured at the end of both the Freshman and Sophomore years ($p < .05$ consistently);

5. *General Ability Test Performance in Math-Science Areas* — Program students have shown significantly higher results on both Math and Science Sub-tests of the ACT after completing the Freshman and the Sophomore year;

6. *Increased General Self-Concept Strength* — Based on factor analytic results, and statistical tests of the resulting factors, Program students have increased in general self-concept strength as compared to regular college students, and their self-concepts have more clearly differentiated than those of regular college students;

7. *Higher Specific Course-Related Self-Concept Attitudes in Science Areas* — Program students show higher mean self-ratings on knowledge and performance in Science areas;

8. *Importance of Educational Contribution of Freshman Year* — Program students more typically perceived their Freshman year as academically helpful, more intellectually stimulating, and as a major factor in their successfully completing college than did regular college students.

PLEASE NOTE:

Pages 107-109, Appendix E: "SRA Verbal Form, Form E", and
pages 110-112, Appendix F: "SRA Nonverbal Form, Form AH", both copyright 1947 by Science Research Associates, Inc. and
pages 113-115, Appendix G: "Self Analysis Form", copyright 1963 by R.B. Cottell and

UNIVERSITY MICROFILMS.
Print your name, group, and date in the spaces provided at the right side of this page. Now look at the problems below:

CASH means the same as or opposite of: □ price □ refund ✗ money □ bank

Bill Laird pays a quarter for two cigars. How many can he buy for a dollar?

The wages paid to an employee:
Think of the word that fits this description. Select the first letter of this word.

The next number in the series 2 4 6 8 10 is:

The right answers are money, S—(for Salary), and 14. An X has been marked in the box in front of each of these answers.

Now work the problems below. In each row, put an X in the box for the answer. Mark your answers heavily. Do NOT make any marks except your answers.

If you want to change an answer, draw a circle around the box like this: ✗. Then mark the new answer in the usual way.

MANY means the same as or opposite of: □ ill □ sour □ down □ few

An office has six typists. Two more are hired. What is the total number of typists now employed?

Use scratch pad for figuring. Do NOT mark on booklet.

A holiday from the job is:
Think of the word that fits this description. Select the first letter of this word.

The next number in the series 10 8 11 9 12 10 is:

You should have marked the boxes in front of few, 8, V—, and 12. Be sure you understand how to work these problems. When the examiner gives the signal, you are to work more problems like those above. Work quickly, but try not to make mistakes. You will have 15 minutes. You are not expected to finish in the time allowed. There are TWO pages of problems.
Jim had twelve books. He bought three more and then loaned six to George. How many books does Jim have now?

A mark which remains after a wound is healed:

If you pay $1.20 for two pounds of candy, how much would you pay for half a pound?

You have a date at half past six and arrive at a quarter after seven. How many minutes late are you?

If he works 5 days a week, how much does he earn every day?

It rains 6 inches every month. How many feet is that?

Which makes food absorbable:

An artist works on a drawing for 8 weeks and earns $200. How much does he make each day?

A word that describes a metal whose main chemical characteristic is its ability to conduct electricity:

The number of years in a century:

The number of years in a decade:

The number of days in a week:

The number of hours in a day:

The number of minutes in an hour:

A natural phenomenon involving a moving body:

A product which can be put on fruit to protect it from flies:

An object which will attract iron:

The number of days in two weeks:

The number of months in a year:

The number of weeks in a month:

The number of years in a millennium:

The number of days in a lunar month:

The number of days in a leap year:
43. INFAMOUS means the same as or opposite of: □ dauntless □ honorable □ contagious □ intricate
44. LACERATED means the same as or opposite of: □ dauntless □ honorable □ contagious □ intricate
45. A turner buys land for $100. He sells it for $120, gaining $4 an acre. How many acres did he buy?

46. The point where earth and sky seem to meet:
47. A soldier below the grade of a non-commissioned officer:
48. The next number in the series 14 11 15 16 13 17 18 is:
49. The next number in the series 9 10 8 24 6 7 5 is:

50. OPTIONAL means the same as or opposite of: □ ocular □ obligatory □ reasonable □ raucous
51. IMPOTENT means the same as or opposite of: □ powerfu l □ proas ic □ troubled □ tribal
52. You pay $21 for 3½ tons of coal. What will be the bill for 7½ tons?

53. A water channel, man-made and used for navigation:
54. A tenth part of a cent:
55. The next number in the series 42 45 15 18 6 9 3 is:
56. The next number in the series 1 2 4 8 10 20 22 is:

57. RECIPROCAL means the same as or opposite of: □ mutual □ residual □ defective □ conditioned
58. DEFT means the same as or opposite of: □ deaf □ clumsy □ talkative □ valuable
59. Eight turns of a screw advance it 4 inches. How many inches will ten turns advance it?
60. A book of the names and addresses of people living in a city:
61. A very strong wire rope:
62. The next number in the series 1 2 5 11 12 15 21 is:
63. The next number in the series 1 5 11 19 41 55 is:

64. STEADFAST means the same as or opposite of: □ irresolve □ tawdry □ consequential □ buoyant
65. CALLOUS means the same as or opposite of: □ desperate □ sensitive □ calamitous □ hollow
66. In copy work, a typist's average time is 3½ minutes per page. How many pages can she copy in 43 minutes?
67. An instrument to record the number of steps taken in walking:
68. An edifice for dramatic performances:
69. The next number in the series 6 10 12 10 12 14 12 is:
70. The next number in the series 0 1 3 6 7 14 is:

71. AVARICIOUS means the same as or opposite of: □ greedy □ grumpy □ grizzly □ greedy
72. REQUISITE means the same as or opposite of: □ stubborn □ redeemable □ dispensable □ pedantic
73. A merchant bought chairs at $24 a dozen. In selling them he received as much for 2 chairs as he had paid for 3 chairs. How much did he charge for 12 chairs?
74. A place where a river may be crossed by wading:
75. A space entirely devoid of matter:
76. The next number in the series 32 16 19 20 10 13 14 is:
77. The next number in the series 22 20 10 6 4 2 is:

78. METICULOUS means the same as or opposite of: □ unwieldy □ tense □ nervous □ slovenly
79. REIGN means the same as or opposite of: □ democratic □ indignant □ mottled □ kind
80. A clock that gains 2 minutes every day was set right at noon Tuesday. What time was it by the clock at midnight the following Thursday?
81. A burn or injury to the flesh by hot liquid or steam:
82. The act of falsely producing a writing or instrument:
83. The next number in the series 35 28 22 17 13 10 8 is:
84. The next number in the series 4 6 3 7 9 6 10 is:

STOP HERE...THIS IS THE END OF THE TEST
Print your name, group, and date in the spaces provided at the right side of this page. Now look at the row of pictures below:

There are faces of four girls and a man. The man's face is the MOST DIFFERENT picture in the row. An X has been marked in the box under the man.

Now look at the next three rows of problems. An X has been marked in the box of the MOST DIFFERENT picture in each row. Figure out why that picture was marked in each row.

Now work the problems below. In each row, put an X in the box of the picture that is MOST DIFFERENT. Mark your answers heavily. Do NOT make any marks except your answers. If you wish to change an answer, draw a circle around the box like this: O. Then mark the new answer in the usual way.

You should have marked the man walking, the girl's face, the triangle, the tramp, the nickel, and the fourth circle. Be sure you understand how to work this kind of problem. When the examiner gives the signal, you are to work more problems like those above. Work quickly, but try not to make mistakes. You will have 10 minutes for the test. You are not expected to finish in the time allowed. There are TWO pages of problems.
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| ![Image 1](image1.png) | ![Image 2](image2.png) | ![Image 3](image3.png) | ![Image 4](image4.png) | ![Image 5](image5.png) | ![Image 6](image6.png) | ![Image 7](image7.png) | ![Image 8](image8.png) | ![Image 9](image9.png) | ![Image 10](image10.png) | ![Image 11](image11.png) | ![Image 12](image12.png) | ![Image 13](image13.png) | ![Image 14](image14.png) | ![Image 15](image15.png) | ![Image 16](image16.png) | ![Image 17](image17.png) | ![Image 18](image18.png) | ![Image 19](image19.png) | ![Image 20](image20.png) | ![Image 21](image21.png) | ![Image 22](image22.png) | ![Image 23](image23.png) | ![Image 24](image24.png) | ![Image 25](image25.png) | ![Image 26](image26.png) |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| ![Image 27](image27.png) | ![Image 28](image28.png) | ![Image 29](image29.png) | ![Image 30](image30.png) | ![Image 31](image31.png) | ![Image 32](image32.png) | ![Image 33](image33.png) | ![Image 34](image34.png) | ![Image 35](image35.png) | ![Image 36](image36.png) | ![Image 37](image37.png) | ![Image 38](image38.png) | ![Image 39](image39.png) | ![Image 40](image40.png) | ![Image 41](image41.png) | ![Image 42](image42.png) | ![Image 43](image43.png) | ![Image 44](image44.png) | ![Image 45](image45.png) | ![Image 46](image46.png) | ![Image 47](image47.png) | ![Image 48](image48.png) | ![Image 49](image49.png) | ![Image 50](image50.png) | ![Image 51](image51.png) |
APPENDIX G

SELF ANALYSIS FORM

NAME: ___________ ___________ ___________ 

First Middle Last 

TODAY’S DATE: ___________ 

SEX: (Write M or F) 

AGE: (Nearest Year) 

OTHER FACTS: (Address, Occupation, etc., as instructed) 

Inside this booklet you will find forty questions, dealing with difficulties that most people experience at one time or another. It will help a lot in self-understanding if you check Yes, No, etc., to each, frankly and truthfully, to describe any problems you may have.

Start with the two simple examples just below, for practice. As you see, each inquiry is actually put in the form of a sentence. By putting a cross, X, in one of the three boxes on the right you show how it applies to you. Make your marks now.

1. I enjoy walking............................................................

Yes □ No □ Occasionally □

A middle box is provided for when you cannot definitely say Yes or No. But use it as little as possible.

2. I would rather spend an evening:

(A) talking to people, (B) at a movie.

Yes □ No □ In between □

About half the items inside end in A and B choices like this. B is always on the right. Remember, use the “In between” or “Uncertain” box only if you cannot possibly decide on A or B.

Now:

1. Make sure you have put your name, and whatever else the examiner asks, in the place at the top of this page.

2. Never pass over an item but give some answer to every single one. Your answers will be entirely confidential.

3. Do not spend time pondering. Answer each immediately, the way you want to at this moment (not last week, or usually). You may have answered questions like this before; but answer them as you feel now.

Most people finish in five minutes; some, in ten. Hand in this form as soon as you are through with it, unless told to do otherwise. As soon as the examiner signals or tells you to, turn the page and begin.

© 1957, 1963, by R. B. Cattell. All rights reserved. Printed in U. S. A. Published by the Institute for Personality and Ability Testing, 1602-04 Coronado Drive, Champaign, Illinois.
1. I find that my interests, in people and amusements, tend to change fairly rapidly.

2. If people think poorly of me I can still go on quite serenely in my own mind.

3. I like to wait till I am sure that what I am saying is correct, before I put forward an argument.

4. I am inclined to let my actions get swayed by feelings of jealousy.

5. If I had my life to live over again I would: (A) plan very differently, (B) want it the same.

6. I admire my parents in all important matters.

7. I find it hard to “take ‘no’ for an answer”, even when I know what I ask is impossible.

8. I doubt the honesty of people who are more friendly than I would naturally expect them to be.

9. In demanding and enforcing obedience my parents (or guardians) were: (A) always very reasonable, (B) often unreasonable.

10. I need my friends more than they seem to need me.

11. I feel sure that I could “pull myself together” to deal with an emergency.

12. As a child I was afraid of the dark.

13. People sometimes tell me that I show my excitement in voice and manner too obviously.

14. If people take advantage of my friendliness I: (A) soon forget and forgive, (B) resent it and hold it against them.

15. I find myself upset rather than helped by the kind of personal criticism that many people make.

16. Often I get angry with people too quickly.

17. I feel restless as if I want something but do not know what.

18. I sometimes doubt whether people I am talking to are really interested in what I am saying.

19. I have always been free from any vague feelings of ill-health, such as obscure pains, digestive upsets, awareness of heart action, etc.

20. In discussion with some people, I get so annoyed that I can hardly trust myself to speak.

CONTINUE ON NEXT PAGE.
21. Through getting tense I use up more energy than most people in getting things done.  

22. I make a point of not being absent-minded or forgetful of details.  

23. However difficult and unpleasant the obstacles, I always stick to my original intentions.  

24. I tend to get over-excited and "rattled" in upsetting situations.  

25. I occasionally have vivid dreams that disturb my sleep.  

26. I always have enough energy when faced with difficulties.  

27. I sometimes feel compelled to count things for no particular purpose.  

28. Most people are a little queer mentally, though they do not like to admit it.  

29. If I make an awkward social mistake I can soon forget it.  

30. I feel grouchy and just do not want to see people:  
   (A) occasionally, (B) rather often.  

31. I am brought almost to tears by having things go wrong.  

32. In the midst of social groups I am nevertheless sometimes overcome by feelings of loneliness and worthlessness.  

33. I wake in the night and, through worry, have some difficulty in sleeping again.  

34. My spirits generally stay high no matter how many troubles I meet.  

35. I sometimes get feelings of guilt or remorse over quite small matters.  

36. My nerves get on edge so that certain sounds, e.g., a screechy hinge, are unbearable and give me the shivers.  

37. If something badly upsets me I generally calm down again quite quickly.  

38. I tend to tremble or perspire when I think of a difficult task ahead.  

39. I usually fall asleep quickly, in a few minutes, when I go to bed.  

40. I sometimes get in a state of tension or turmoil as I think over my recent concerns and interests.
DIRECTIONS

In this booklet are statements representing things that people consider to be important to their way of life. These statements are grouped into sets of three. This is what you are asked to do:

Examine each set. Within each set, find the statement of the three which represents what you consider to be most important to you. Blacken the space beside that statement in the column headed M (for most).

Next, examine the remaining two statements in the set. Decide which one of these statements represents what you consider to be least important to you. Blacken the space beside that statement in the column headed L (for least).

For every set you will mark one statement as representing what is most important to you, one statement as representing what is least important to you, and you will leave one statement unmarked.

Example

To have a hot meal at noon
To get a good night's sleep
To get plenty of fresh air

Suppose that you have examined the three statements in the example, and although all three of the statements may represent things that are important to you, you feel that “To get plenty of fresh air” is the most important to you. You would blacken the space in the column headed M (for most) beside the statement. Notice that this has been done in the example.

You would then examine the remaining two statements to decide which of these represents something that is least important to you. Suppose that “To have a hot meal at noon” is the least important to you. You would blacken the space in the column headed L (for least) next to this statement. Notice that this has been done in the example.

You would leave the remaining statement unmarked.

In some cases it may be difficult to decide which statement to mark. Make the best decision that you can. This is not a test; there are no right or wrong answers. Be sure to mark only one M (most) choice and only one L (least) choice in a set. Do not skip any sets. Answer every set. Turn this booklet over and begin.
To be free to do as I choose
To have others agree with me
To make friends with the unfortunate
To be in a position of not having to follow orders
To follow rules and regulations closely
To have people notice what I do
To hold an important job or office
To treat everyone with extreme kindness
To do what is accepted and proper
To have people think of me as being important
To have complete personal freedom
To know that people are on my side
To follow social standards of conduct
To have people interested in my well being
To take the lead in making group decisions
To be able to do pretty much as I please
To be in charge of some important project
To work for the good of other people
To associate with people who are well known
To attend strictly to the business at hand
To have a great deal of influence
To be known by name to a great many people
To do things for other people
To work on my own without direction
To follow a strict code of conduct
To be in a position of authority
To have people around who will encourage me
To be friends with the friendless
To have people do good turns for me
To be known by people who are important
To be the one who is in charge
To conform strictly to the rules
To have others show me that they like me
To be able to live my life exactly as I wish
To do my duty
To have others treat me with understanding
To be the leader of the group I'm in
To have people admire what I do
To be independent in my work
To have people act considerately toward me
To have other people work under my direction
To spend my time doing things for others
To be able to lead my own life
To contribute a great deal to charity
To have people make favorable remarks about me
<table>
<thead>
<tr>
<th>To be a person of influence</th>
<th>M L</th>
</tr>
</thead>
<tbody>
<tr>
<td>To be treated with kindness</td>
<td></td>
</tr>
<tr>
<td>To always maintain the highest moral standards</td>
<td></td>
</tr>
<tr>
<td>To be praised by other people</td>
<td></td>
</tr>
<tr>
<td>To be relatively unbound by social conventions</td>
<td></td>
</tr>
<tr>
<td>To work for the good of society</td>
<td></td>
</tr>
<tr>
<td>To have the affection of other people</td>
<td></td>
</tr>
<tr>
<td>To do things in the approved manner</td>
<td></td>
</tr>
<tr>
<td>To go around doing favors for other people</td>
<td></td>
</tr>
<tr>
<td>To be allowed to do whatever I want to do</td>
<td>M L</td>
</tr>
<tr>
<td>To be regarded as the leader</td>
<td></td>
</tr>
<tr>
<td>To do what is socially correct</td>
<td></td>
</tr>
<tr>
<td>To have others approve of what I do</td>
<td></td>
</tr>
<tr>
<td>To make decisions for the group</td>
<td></td>
</tr>
<tr>
<td>To share my belongings with other people</td>
<td></td>
</tr>
<tr>
<td>To be free to come and go as I want to</td>
<td>M L</td>
</tr>
<tr>
<td>To help the poor and needy</td>
<td></td>
</tr>
<tr>
<td>To show respect to my superiors</td>
<td></td>
</tr>
<tr>
<td>To be given compliments by other people</td>
<td></td>
</tr>
<tr>
<td>To be in a very responsible position</td>
<td></td>
</tr>
<tr>
<td>To do what is considered conventional</td>
<td></td>
</tr>
<tr>
<td>To be in charge of a group of people</td>
<td>M L</td>
</tr>
<tr>
<td>To make all of my own decisions</td>
<td></td>
</tr>
<tr>
<td>To receive encouragement from others</td>
<td></td>
</tr>
<tr>
<td>To be looked up to by other people</td>
<td></td>
</tr>
<tr>
<td>To be quick in accepting others as friends</td>
<td></td>
</tr>
<tr>
<td>To direct others in their work</td>
<td></td>
</tr>
<tr>
<td>To be generous toward other people</td>
<td>M L</td>
</tr>
<tr>
<td>To be my own boss</td>
<td></td>
</tr>
<tr>
<td>To have understanding friends</td>
<td></td>
</tr>
<tr>
<td>To be selected for a leadership position</td>
<td>M L</td>
</tr>
<tr>
<td>To be treated as a person of some importance</td>
<td></td>
</tr>
<tr>
<td>To have things pretty much my own way</td>
<td></td>
</tr>
<tr>
<td>To have other people interested in me</td>
<td>M L</td>
</tr>
<tr>
<td>To have proper and correct social manners</td>
<td></td>
</tr>
<tr>
<td>To be sympathetic with those who are in trouble</td>
<td></td>
</tr>
<tr>
<td>To be very popular with other people</td>
<td>M L</td>
</tr>
<tr>
<td>To be free from having to obey rules</td>
<td></td>
</tr>
<tr>
<td>To be in a position to tell others what to do</td>
<td></td>
</tr>
<tr>
<td>To always do what is morally right</td>
<td>M L</td>
</tr>
<tr>
<td>To go out of my way to help others</td>
<td></td>
</tr>
<tr>
<td>To have people willing to offer me a helping hand</td>
<td>M L</td>
</tr>
<tr>
<td>To have people admire me</td>
<td></td>
</tr>
<tr>
<td>To always do the approved thing</td>
<td></td>
</tr>
<tr>
<td>To be able to leave things lying around if I wish</td>
<td></td>
</tr>
</tbody>
</table>
The following questions concern your personal feelings about yourself and your school ability. You are to compare with other students. (Your answers for this form will be kept confidential.)

<table>
<thead>
<tr>
<th>No Time Limit</th>
<th>Picture of Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) School achievement</td>
<td>Very much above average</td>
</tr>
<tr>
<td>2) School ability</td>
<td>Above average</td>
</tr>
<tr>
<td>3) Intelligence</td>
<td>Average</td>
</tr>
<tr>
<td>4) Vocabulary</td>
<td>Below average</td>
</tr>
<tr>
<td>5) Mental health</td>
<td>Very much above average</td>
</tr>
<tr>
<td>6) Nervousness</td>
<td>Above average</td>
</tr>
</tbody>
</table>

**APPENDIX I**

<table>
<thead>
<tr>
<th>Name</th>
<th>Picture of Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>College</td>
<td>Picture of Person</td>
</tr>
</tbody>
</table>

| 119 | 00 00 00 00 |
| 00 00 00 00 | 00 00 00 00 |
| 00 00 00 00 | 00 00 00 00 |
| 00 00 00 00 | 00 00 00 00 |
| 00 00 00 00 | 00 00 00 00 |
| 00 00 00 00 | 00 00 00 00 |
| 00 00 00 00 | 00 00 00 00 |
Compared with other students, how do you rate yourself on:

<table>
<thead>
<tr>
<th>Question</th>
<th>Very much</th>
<th>Below average</th>
<th>Average</th>
<th>Above average</th>
<th>Very much</th>
<th>Below average</th>
<th>Average</th>
<th>Above average</th>
<th>Very much</th>
<th>Below average</th>
<th>Average</th>
<th>Above average</th>
</tr>
</thead>
<tbody>
<tr>
<td>7) Wanting to do what is socially correct and following the rules.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8) Wanting to be treated with understanding.</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>9) Wanting to be looked up to and admired.</td>
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<td></td>
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</tr>
<tr>
<td>10) Wanting to have the freedom to do what you want.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>11) Wanting to do things for others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>12) Wanting to lead and be in charge of others.</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>13) Your willingness to volunteer an answer in class or on a test.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Compared with other students, how do you rate yourself on:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14) Liking to be with others.</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>15) Liking to speak in public and to be seen by others.</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>16) Cheerfulness</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>17) Being even-tempered, easy-going.</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>18) Accepting of people at face value.</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>19) Being &quot;tough-minded&quot;</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
</tbody>
</table>
Compared with other students, how do you rate yourself on:

<table>
<thead>
<tr>
<th></th>
<th>Very much below average</th>
<th>Below Average</th>
<th>Average</th>
<th>Above Average</th>
<th>Very much above average</th>
</tr>
</thead>
<tbody>
<tr>
<td>20) Interest more in abstract ideas than in practical ones.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21) Willing to act without plan, on impulse.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22) Activity, always on the go.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23) Dependability, completing tasks on time.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24) How well you express ideas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25) How well you think in quantitative and analytical terms.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Compared with other students, how do you rate yourself on:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>26) How much you know about social institutions: their nature and change.</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>27) How much you know about &quot;biological&quot; and physical science.</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>28) How good you are in English.</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>29) How good you are in Math.</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>30) How good you are in Social Sciences.</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>31) How good you are in Natural Sciences.</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>32) Your personal appearance is</td>
<td>Very much below average</td>
<td>Below</td>
<td>Average</td>
<td>Average</td>
</tr>
</tbody>
</table>
33) Your sense of humor is  
| Very much below average | Below Average | Average | Above Average | Very much above average |

34) Your creativity is  
| Very much below average | Below Average | Average | Above Average | Very much above average |

35) Compared to how you usually feel, how tired are you today? Circle one answer.  
- Exhausted  
- Tired  
- Average  
- Rested  
- Wide Awake  

36) How many hours of sleep do you usually get a night?  

37) How many hours of sleep did you get last night?  

38) How would you describe yourself in a single sentence?  

39) When you compared yourself with other students to rate yourself on the above questions, which "other students" did you have in mind?
### SUMMARY OF FALL 1968 TEST SCORES

for Bishop College

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Exp. Men</th>
<th>Con. Men</th>
<th>Exp. Women</th>
<th>Con. Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>N = 43</td>
<td>N = 69</td>
<td>N = 56</td>
<td>N = 87</td>
</tr>
</tbody>
</table>

#### ACT STANDARD SCORES

- **English**: 9.86 (4.69), 8.72 (5.12), 12.14 (5.16), 11.05 (5.26)
- **Mathematics**: 11.26 (6.02), 10.90 (5.68), 9.21 (5.57), 9.69 (5.97)
- **Social Studies**: 9.40 (5.77), 10.20 (6.26), 11.36 (6.62), 9.33 (5.76)
- **Natural Science**: 12.60 (4.44), 11.74 (5.18), 11.55 (4.61), 10.71 (4.36)

#### SRA INTELLIGENCE

- **Verbal Raw Score**: 36.60 (8.26), 35.26 (11.59), 35.52 (9.61), 35.40 (11.90)
- **Non-Verbal Raw Score**: 44.02 (7.33), 43.06 (6.92), 44.16 (5.04), 42.54 (7.71)

#### IPAT SELF-ANALYSIS

- **IPAT Self-Analysis**: 27.00 (11.13), 26.85 (10.35), 33.68 (12.46), 30.24 (12.97)

#### SURVEY OF INTERPERSONAL VALUES

- **Support Scale**: 12.98 (5.45), 14.71 (4.57), 15.57 (4.46), 15.40 (4.98)
- **Conformity Scale**: 18.05 (5.18), 17.07 (5.61), 19.86 (4.54), 19.98 (4.77)
- **Recognition Scale**: 10.77 (4.19), 10.62 (4.34), 10.02 (3.86), 10.15 (4.21)
- **Independence Scale**: 15.67 (6.16), 15.88 (5.72), 12.93 (5.68), 12.76 (5.66)
- **Benevolence Scale**: 17.65 (5.89), 19.32 (5.50), 20.25 (4.62), 21.22 (4.30)
- **Leadership Scale**: 15.00 (5.69), 14.77 (5.96), 12.05 (4.42), 12.02 (4.59)
**SUMMARY OF FALL 1968 TEST SCORES**

for **Bishop College**

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>All Exp.</th>
<th>All Control</th>
<th>All College</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 101</td>
<td>N = 161</td>
<td>N = 262</td>
</tr>
<tr>
<td><strong>ACT STANDARD SCORES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>11.15 5.06</td>
<td>10.02 5.31</td>
<td>10.46 5.23</td>
</tr>
<tr>
<td>Mathematics</td>
<td>10.10 5.82</td>
<td>10.23 5.86</td>
<td>10.18 5.83</td>
</tr>
<tr>
<td>Social Studies</td>
<td>10.51 6.19</td>
<td>9.72 5.98</td>
<td>10.02 6.07</td>
</tr>
<tr>
<td>Natural Science</td>
<td>12.01 4.54</td>
<td>11.17 4.76</td>
<td>11.50 4.68</td>
</tr>
<tr>
<td><strong>SRA INTELLIGENCE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal Raw Score</td>
<td>36.20 9.07</td>
<td>35.31 11.56</td>
<td>35.65 10.66</td>
</tr>
<tr>
<td>Non-Verbal Raw Score</td>
<td>44.04 6.14</td>
<td>42.63 7.28</td>
<td>43.18 6.88</td>
</tr>
<tr>
<td><strong>IPAT SELF-ANALYSIS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30.69 12.21</td>
<td>28.93 11.91</td>
<td>29.61 12.03</td>
</tr>
<tr>
<td><strong>SURVEY OF INTERPERSONAL VALUES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support Scale</td>
<td>14.44 5.02</td>
<td>15.16 4.75</td>
<td>14.88 4.86</td>
</tr>
<tr>
<td>Conformity Scale</td>
<td>19.10 4.87</td>
<td>18.73 5.38</td>
<td>18.87 5.18</td>
</tr>
<tr>
<td>Recognition Scale</td>
<td>10.28 3.99</td>
<td>10.40 4.26</td>
<td>10.35 4.15</td>
</tr>
<tr>
<td>Independence Scale</td>
<td>14.04 6.01</td>
<td>14.14 5.89</td>
<td>14.10 5.93</td>
</tr>
<tr>
<td>Benevolence Scale</td>
<td>19.25 5.36</td>
<td>20.44 5.07</td>
<td>19.98 5.21</td>
</tr>
<tr>
<td>Leadership Scale</td>
<td>13.30 5.16</td>
<td>13.23 5.56</td>
<td>13.26 5.40</td>
</tr>
</tbody>
</table>
August 11, 1972

The Doctoral Advisor Committee
for Bobbie Franklin Wells
North Texas State University
Denton, Texas

Gentlemen:

Please be advised that Bobbie Franklin Wells has conversed with me regarding the dissertation project she is now completing to be presented before her doctoral committee in partial fulfillment of the requirements for the terminal degree in College teaching with an emphasis upon languages.

As I understand it, Mrs. Wells is engaged in a project having the title "A Follow Up Study of the First Generation Graduates of an Experimental Curriculum Program in a Member College of the Thirteen College Consortium".

The project should prove to be a significant piece of research to validate the claim of the Thirteen College Curriculum Program methodology which emphasizes a new approach to instruction by focusing upon individual student needs and a student centered classroom allowing for freedom of student expression without being threatened by an authoritarian teacher who would want to peddle his/her College or graduate school lecture notes without the slightest sense of contemporaneity.

My knowledge of Mrs. Wells' project is that she is comparing the responses of the TCCP group with a non-TCCP group of students and that she intends to interpret their reactions in determining if, in fact, the TCCP approach is a better one.

The study, indeed, will be beneficial to Bishop College since we have moved to implement the methodology across the entire freshman year courses and because we have been thinking about implementation at the sophomore level.

Bishop College would appreciate knowing the reaction of the committee also after Mrs. Wells has completed the academic requirements related to the project.

Very truly yours,

Richard A. Rollins
Dean of the College

RAR/jvg
Appendix L

POST GRADUATE QUESTIONNAIRE

Part One

Name ____________________________________________ (circle one: married, single, other).
Year entered college as a Freshman ___________, Name of college entered ________________
Undergraduate major ____________________ minor _______________ Date graduated __________
Name of Graduate School enrolled in _______________ major ____________________
Member of the armed services? (circle one): yes no. Employed? (circle one): yes no
Name of your employer __________________________________________
Your position _________________________________________________
Main duties of your position: ___________________________________
Relationship of your position to your undergraduate major or minor, if any:
________________________________________________________________________
Position that you eventually hope to attain: __________________________
Highest academic degree that you plan eventually to attain: ______________

Part Two

Selected Statements Concerning Undergraduate Academic Experiences

Instructions: In the space to the left of the page, please circle the letter that most closely corresponds to your opinion concerning this experience, generally speaking, while you were a student at Bishop College. The values for each letter are as follows:
(a) strongly agree; (b) usually agree; (c) usually disagree; (d) strongly disagree

a b c d 1. Courses contributed significantly to how I think about things today.

a b c d 2. College has helped me toward achieving important personal goals.

a b c d 3. If I had the choice to make again I would attend the same college for my undergraduate studies.

a b c d 4. Courses were an intellectual challenge.

a b c d 5. Teachers attempted to take into consideration differences in student backgrounds.

a b c d 6. Courses emphasized students doing things rather than just listening to the teacher.
7. Class discussions were often vigorous and intense.

8. Teachers related course materials and discussion to areas of student interest.

9. Students felt the quality of instruction was very good.

10. Students frequently continued discussion with their teachers outside of regular class periods.

11. Classroom discussion would continue among students after class.

12. Classroom discussions and materials were often related to problems in the community.

13. Teachers used such things as sound films, tapes, records, slides, overhead projector or film strips, in addition to readings.

14. Teachers made courses relevant to contemporary issues, such as those that affect minority cultural groups and poor people in America.

15. In general, the quality of education at my undergraduate college is about the same as that of any other college in this area.

16. The teachers at my undergraduate college are as good as the teachers at colleges of comparable size in this area.

17. The curricula available at my undergraduate college are as good as the curricula of colleges of comparable size in this area.

18. In general, the education available at my undergraduate college fits my particular needs better than that which was available at other colleges in this area.

19. The primary function of Black Colleges should be to prepare students for jobs in society so that they can work for changes from within the American system.

20. Since Black students will have to live in a society which is predominantly white, Black colleges should prepare their students to live according to the values of that society.

Part Three

Selected Statements Concerning Personal Values

Instructions: In the space to the left of the page, please circle the letter that most closely corresponds to your opinion concerning your own personality. The values for each letter are as follows:

(a) much above average; (b) above average; (c) average; (d) below average

1. Intelligence

2. Mental health
3. Wanting to do what is socially correct and following the rules....
4. Wanting to be treated with understanding....
5. Wanting to be looked up to and admired....
6. Wanting to have the freedom to do what you want....
7. Wanting to do things for others....
8. Wanting to lead and be in charge of others....
9. Wanting to speak in public and to be seen by others....
10. Willingness to volunteer for church or civic project....
11. Wanting to be looked up to and admired....
12. Ability to generate new ideas....
13. Cheerfulness....
14. Being eventemperated, easy going....
15. Accepting people at face value....
16. Being “tough minded”.
17. Willingness to act without plan, on impulse....
18. Activity, always on the go....
19. Dependability, completing tasks on time....
20. How well you express ideas....
21. How much you know about social institutions, their nature and change....
22. How much you know about yours and other cultures, the origins, arts, and development....
23. How sure are you of your “identity”....
24. Your ability to carry out ideas of your own....
25. Your chances of success in the future....

* Please note: Now that you have completed the questionnaire, please seal together the outside folder with the attached gummed label. Your prompt return is so greatly appreciated.
The meeting which brought together for the first time the Program directors, the presidents of the cooperating colleges, the Institute for Services to Education President and Staff was held in Washington, D. C. May 3-4, 1967. This became the first session by the whole group involving detailed Program planning. Only the president of the cooperating college had the authority to initiate the experimental program in his institution, as the program was to cross all areas of the college: admissions, registration, financial aid, instruction, counseling and guidance, and employment of faculty and staff.

The summer of 1967, a "writing conference" assembled at Pine Manor Junior College, Chestnut Hill, Massachusetts. Under the leadership of the Institute for Services to Education (Appendix B) details of organization and administration of the experimental program for the Consortium of Thirteen Colleges (Appendix A) were decided. Among these were the following:

Proposal for the Experiment

The proposal for the experiment was submitted individually by each of the thirteen colleges to the Developing
Colleges Program of the Office of Education. It appeared in the "Thirteen Colleges Curriculum Program" Grant Application (op. cit., page 2) and stated:

"In cooperation with the Institute for Services to Education (ISE) and twelve other predominantly Negro colleges, (X) College plans to structure an intensive two-year program with a carefully designed innovative curriculum to bring a selected group of academic risk students to a level where they can compete intellectually, socially, and culturally with success on entering their junior year. The college's faculty will be involved in the design and development of the curriculum, and in continuing discussion and self-analysis of procedures, methods, and objectives with insightful and dedicated people interested in the same problems from other institutions. Thus, the program will foster a spirit of educational experimentation with respect to such students, while simultaneously stimulating similar innovative activities on our campus, and insuring continuation of the dynamism and goals of the program after its novelty fades."

Subsequent approval of a two and one-half million dollar grant under Title III of the Higher Education Act of 1965, provided the impetus for the Consortium to launch the mammoth experiment in curriculum development. Subsequent funding has come from the Office of Education, the Bureau of Research, the National Science Foundation--Division of Undergraduate Education, the Ford Foundation, the Carnegie Foundation and the Esso Foundation.
Project Design

The establishment of the consortium and the continuation of the project over a number of years are basic to the design. The developing curricula and its special methodology are reinforced at every point on the campus: textbooks, laboratory equipment, standardized tests, certification of professors, accreditation of the college, school architecture, line items in the budget and departmentalization of the faculty.

The purpose of the consortium is to help create a new environment supportive of the new effort. The "college within the college" on the individual campus is one of independent resources and inter-institutional faculty colleagueship.

Regulations of the Institute for Services to Education

Braithwaite gives the following regulations:

1. The Institute for Services to Education would maintain the professional staff in each of the areas in which the Thirteen-College Curriculum Program is involved.

2. At each cooperating college a program director and a counselor would be appointed. The program
director being responsible for coordinating the program administratively and educationally.

3. The President of the Institute would be responsible for open communication between the college presidents and his office and would effect the processes of publicity and public relations.

4. The Director from the Institute for Services to Education of the Curriculum Resources Group would be responsible for providing leadership in the areas of curriculum development, and would maintain relationships with the Program on each campus.

5. The Director of Evaluation would be responsible for working with campus counselors and the evaluation of the Program.

6. The Institute for Services to Education would organize and administer the Summer Workshop.

7. The campus director of the Experimental Program would organize and administer the campus Experimental Program. He/she must possess the following qualifications, without rank order:
   A. Experience as an educator, planner, administrator, and leader.
   B. Knowledge of the total academic structure of the college.
C. An awareness of current academic thinking and outstanding innovative practices.
D. Knowledge of psychology of teaching and learning.
E. Adequate knowledge of each subject area to hold subject dialogue.
F. Expertise in the appraisal and selection of personnel.
G. The ability to elicit confidence and trust.
H. An attitude of flexibility without permissiveness.
I. Openmindedness
J. The ability to hold responsible dialogue and challenge to teachers.
K. Belief in the "general education" ideal.

8. The campus counselor would execute the details of the Campus Experimental Program, that are related to his/her qualifications. Without rank order, these qualifications are:
A. Knowledgeable about all the areas of the experimental program.
B. The ability to provide testing data and other facts needed for a sophisticated evaluation of the experiment on campus.
C. Ability to assist students in their developmental processes, their academic growth, personal adjustment, and development of self-sufficiency.

D. The ability to organize faculty for academic counseling.

E. Expertise in the making, keeping and interpreting personnel records for Experimental Program students and control students.

F. The ability to help students to take a positive attitude towards their work and to put forth optimum effort for academic achievement.

9. Teachers, according to Humphries, et al, should possess the following qualifications:

A. Experience, teaching in the black college.

B. Proved ability as a creative teacher and developer of new curriculums; ability to demonstrate good teaching, not merely talk about it.

C. Recognition through publication and other means as a contributor to a given field.

D. Commitment to the program through participation in the Summer Workshop.

Salary compensation for the Experimental Program Staff would be according to individual contract with the College. Payments of these contracts, however, were subsidized by
Federal funding for the Experimental Program.

Incentive compensation for participation in the Summer Workshop, planned by the coordinating college--Clark College, was payable to individual staff by the agency of the Institute for Services to Education.
APPENDIX N

THE SUMMER WORKSHOP

Humphries, et al describe the Summer Workshop:

Purposes of Workshop

Since the summer of 1967, the Institute for Services to Education has managed Summer Workshops, initially of 8 weeks duration then of 6 weeks duration, as an essential part of the Thirteen-College Curriculum Program.

The theory of the Summer Workshop is that the teachers, counselors, and directors who make up the program need to get together for an extended period of time to engage in fresh thinking, rework what they are doing, and actually teach in new ways. The approach is specific, technical and task-oriented.

The main business of the Summer Workshop is done by the participants in the different areas working in small groups called workshops. The principle kind of workshop, called a teaching workshop, serves to introduce teachers to the curriculum materials developed so far and to bring teachers together to work on new materials.

Design of Workshop

The basic design of the teaching workshops is to involve the teachers in working with units. First, the Institute
for Service to Education staff and veteran teachers demonstrate teaching, using the units, with the other teachers serving as students. The teachers themselves do computer programming, carry out chamber theater dramatizations, and undertake community studies. Then, the new teachers take turns doing the teaching, again with the other teachers serving as students. Here the teachers assume responsibility in arranging for all the equipment, reading matter, tapes, records, field trips, just as if they were teaching in their own classrooms. Finally, the new teachers collaborate with each other on the development of their own units, and teach their units to the other teachers.

Design of Curriculum Units

The basic design of the curriculum units is to open matters up for students so that they can devise and interpret problems for themselves.

The curriculum materials and activities that constitute a course are built up from previously developed curriculum units. A unit can last from a few class periods to a month or so. A unit focuses on a particular topic or activity. Physically, it often includes a number of related components—readings, guide for teachers, equipment, tests, classroom practices. The Summer Workshop starts with a sizeable collection of curriculum units already on hand, developed at the previous Summer Workshops. The teaching workshops
serve to introduce the units to the teachers and to involve the teachers in the development of their own units.
## EXPERIMENTAL CURRICULUM PROGRAM

### Sample College Fall Schedule—Tentative*

1972-73

<table>
<thead>
<tr>
<th>Group</th>
<th>Course</th>
<th>HR.</th>
<th>Time</th>
<th>Days</th>
<th>Instr.</th>
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<td>Brown</td>
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|          |                 |     |      |          |         |         |
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| 4        | Quan. Analy.   | 9:00| MTWF | Flucas   | 216JH   |
| 4        | Ideas and Exp. | 11:00| MTTHF| Breaux   | 103JH   |
| 4        | Physical Science| 3:00| TF   | Toliver  |         |
| 4        | Soc. Inst.     | 2-4:00| MW | Brown    | 200MH   |

| Group III |                 |     |      |          |         |         |
|           |                 |     |      |          |         |         |
| 1         | PE              | 8:00| MTTHF|          |         |         |
| 4         | Ideas and Exp. | 10:00| MTTHF| Pollard  | 104JH   |
| 4         | Soc. Inst.     | 9:00| MTWF | Brown    | 214JH   |
| 4         | Quan. Analy.   | 1:00| MTWF | Flucas   | 200JH   |
| 4         | Physical Science| 3:00| TF   | White    | 203HH   |

*As Suggested by Durley.*
## APPENDIX I--Continued

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APPENDIX P

THE EXPERIMENTAL CURRICULUM PROGRAM MATERIALS

Humphries, et al give the following descriptions:

Ideas and Their Expression (English)

1. Responsibility: Student Manual
   Responsibility: Teacher's Manual
   This sequence of units explores the theme of responsibility to self, family, community, state and God. It is divided into four sections: Humor and Satire; Language and Speech-Drama; Language and Speech-Fiction; Ideas and Their Expression. Humor and Satire investigates the various forms of humor in depth. It looks at oral as well as written forms of humor which range from a recording of Bill Cosby's Noah to Jonathan Swift's "A Modest Proposal." Language and Speech - Drama examines language, both oral and written as reflected in drama. Language and Speech - Fiction examines language, primarily as it is reflected in fiction. Ideas and Their Expression examines the relationship between ideas and action, through examining selections ranging from Imamu Ameer Baraka (LeRoi Jones) to Plato.

2. Love: Student Manual
   Love: Teacher's Manual
   This sequence, which consists of four sections--
Love, Sacred and Profane; Passion; Love and Society, Love and the Family, examines through literature, film, records, and experience, the most primal of man's emotions, love. Special emphasis is placed in this sequence upon the skills of descriptive writing, analysis, interpretation of poetry, and the comparison of western and non-western attitudes toward love and marriage.

3. **Choice:** Student Manual
   **Choice:** Teacher's Manual

While there is special emphasis placed upon giving the student experience in manipulating language through the devices of textual puzzles and various other Institute for Services to Education techniques, the literature which comprises this sequence has been selected and arranged in units that may assist students in an examination of the essential elements of choice. The genres represented in the sequence range from essays to novels and include authors such as de Maupassant, Ibsen, Lonnie Elder, James Baldwin, Dreiser, Claude McKay, Leopold Senghor, Paul Lawrence Dunbar, Walt Whitman and Dylan Thomas.

4. **Self and Alienation:** Student Manual
   **Self and Alienation:** Teacher's Manual

Emphasis in this sequence is placed upon helping students to develop positive self-images through the examination
of the concept of "voice" and the idea of alienation, begin-
ning with man's origins and progressing on through his life
to death. Works in the sequence include African myths and
tales; Biblical myths, Western tales; essays by James
Baldwin, Albert Camus, excerpts from biographical writings
of Frederick Douglass, Malcolm X, Ann Moody and Franz Kafka;
excerpts from the plays of Shakespeare, Ibsen, Albee; and the
poetry of Hughes, Kgositile and Baraka (Jones).

Quantitative and Analytical Thinking
(Mathematics)

The materials listed below are Teacher Manuals, but the
booklets frequently include material that can be handed
directly to students.

1. **It's A Computerized World: Basic Language for GE**
   *Time-Sharing System*
   Giving Instructions in English; Giving Instructions
   in Basic; Translating Instructions from English to Basic;
   Conditional Control Statements; Subscripts; Appendix A (Pro-
   grams Used in Unit); Appendix B (Handouts Used in Unit);
   Appendix C (Analysis of Some Computer Programs); Appendix D
   (Programs Used in other Units).

2. **Base Numeration Systems and Introduction to Computer**
   *Programming (Fortran)*
   Base Two, Base Four, and Base Eight Numeration
3. **Topics in Mathematics**

This unit is a collection of materials and teaching strategies which offer useful motivation for developing some important mathematical ideas. The intuitive approach is stressed throughout. The procedures stimulate the imagination and help build self-confidence by the "doing" of mathematics. In using this approach, the teacher is urged to restrain himself from telling the formulas prematurely. Informal proofs are generally acceptable when they provide convincing arguments during class discussion.

Geo-Board (Area and Pythagorean Theorem); Arithmetic Numerals; Balance Statements (Linear Equations); Perfect Numbers (Including 1/2, 1/3, . . . , Perfect Numbers); Hidden Combinations (Logic Game); Two Students Walk (Coordinate Graphs); Arrays, Polynomials and Finite Differences; Chain Loop Puzzle (Polygons); Over the Edge (Series); Switches and Batteries (Mathematical Model for Physical Situation); Map Coloring (Euler's Theorem); Roll Along With Galileo (Area); The Euler $\phi$ Function; Short Investigations; Arrays of Squares and Cubes, Tower of Hanoi Puzzle, Peg Puzzles, Spirographs and GCD's Box Problem, One Hundred Dots (Combination), Squares and Cubes, Array of Triangles, 3-D Tic-Tac-Toe, Handcuffed Prisoners, Bees and Rabbits and One-Way Streets, Kongisberg
Bridges, Tree Graphs, Friendship Diagrams, Networks, Limit
of a Sequence, Games.

4. Sets and Logic

The Idea of Sets; Forming Sets; Universal Sets and Empty Seats; New Sets From Old Sets; Differences and Complements of Sets; Cartesian Products; Equivalent Sets; True-False Statements; Logical Statements; Compound Statements; Related Statements; Truth Tables; Logical Arguments; 0 and 1 as an Alternative to the T and F notation; Comparing Properties of AND and OR with PLUS and TIMES: Quantifiers; Indirect Proof.

5. Topics in Number Theory: The Number Game

Figurate Numbers; Prime Numbers; Divisors; Greatest Common Divisor; Congruences; Guess My Number; Pythagorean Systems; Linear Diophantine Equations; Euler's $\phi$ Function.

6. Tools and Concepts

This unit is designed to provide an enrichment opportunity for students to develop tools and concepts which are used in various areas of mathematics. Arithmetic progressions, geometric progressions and mathematical induction constitute the first part of the unit. In these sections, several short investigations are described which can give students adequate introductions to these topics. The latter sections of the unit introduce students to the use of the slide rules for both addition and multiplication. For the latter, they are encouraged to make several logarithmic
slide rules using various bases. We feel that such activities give students a better understanding of the exponential principles involved.

7. **Probability and Statistics**

Elementary Combinatorial Principles (Multiplication Principle, Permutation, and Combination); Intuitive Approach to Probability (Meaning of Probability, Mutually Exclusive and Independent Events, Sample Events, Sample Space and Probability Curve); Intuitive Approach to Statistics (Meaning of Random Events, Selecting a Random Sample, Binomial Distribution, and Normal Distribution).

8. **Similarity and Theory of Trigonometry of Triangles**

Traditionally, a trigonometry of the right triangle is introduced by the memorization of the six trigonometric ratios. Special attention is given to the fact that these six trigonometric ratios depend on the measures of the sides of the triangle. Not as much attention is given to the fact that they depend as much upon the sizes of the angles involved. The fact that similar triangles have equal corresponding ratios plays a most significant role in the study of trigonometry. It is in this light that the writing committee developed both a trigonometry for right triangles and a trigonometry for $120^\circ$-triangles.

Similarity; The Trigonometry of Right Triangles; The Ledet Trigonometry; O-Ledet (Right Triangles), 1-Ledet ($120^\circ$-Triangles), . . . N-Ledet.
9. **Models**

   Models (From Attribute Blocks to the Tower of Hanoi) and Their Descriptions; Other Puzzles and Games; Addresses of Companies for Orders; Price List for Models; Book List (Reference Books).

10. **Finite Geometry**

    What is in the Box (Models of Finite Systems); Independence of Axioms; Consistency and Categoricalness; Some Selected Exercises.

11. **Graphing**

    Coordinate Tic-Tac-Toe; Linear Graphs; Loonie Graphs (Analytic Geometry); Relation and Function (Elementary); Empirically Derivable Mathematics (Guessing Functions).

12. **Functions**

    Function Machine; Set notation; INTO and ONTO Functions; Graphs of Relations and Functions; Operations and Functions; Composite Functions.

13. **Number Systems**

    The Number Concept; Numbers and Sets; Real Numbers; Periodic Decimal Fractions; The Magic of Nine; Series and Sequences; Partial Sums; Numbers are in Good Shape; Fibonacci Numbers; Soul Sequences and Series.

14. **Consumer Mathematics**

    Consumer Credit (Your Credit, Personal Bankruptcies, Your Credit Slip, Credit Rating, Cost of Credit, Borrow
Money or Use Charge Account, Interest Rates on Installment Contracts; Money Management (Budgeting, Door-to-Door Salesman, Typical Budget, Stretch Your Money); Preparing For Your Future (Fixed Dollar Investments, Variable Investments); Projects and Community Activities; Consumer Credit Pre-Study Inventory Test.

Social Institutions: Their Nature and Change

1. **The Basis of Community and Society:** Student Manual
   The Basis of Community and Society: Teacher Manual
   This sequence of units examines associations in the student's experience outside the classroom—family, hometown, college town, friends, classmates. It considers the relationship of these associations to larger institutions. Are the smaller associations microcosms of the larger?

2. **The Structure of Community Control:** Student Manual
   The Structure of Community Control: Teacher Manual
   This sequence asks the following questions: who has the power over whom in schools, colleges, churches, and similar institutions? How in these institutions is power manifested and support mustered? These questions are also explored for neighborhood government and for federal, state, and local governments.

3. **The Black Experience:** Student Manual
   The Black Experience: Teacher Manual
   This sequence examines African civilization at two
key points; before colonization and today. It also examines how in America, in the 19th and 20th centuries, black protest and accommodation were played out in family, church, political parties, and pressure groups.

Natural Science (Physical Science and Biology)

The individual booklet is not self-contained or complete. Its effective use is strongly dependent on students' own input and individual response. Laboratory exercises designed to place students into working contact with physical principles lead them to ask questions and discover for themselves the hidden laws. Physical concepts and statements of physical laws are arrived at in the laboratory after careful experimental investigation of physical phenomena and are not given at the outset of experiments. Consequently, statements of the physical laws to be studied do not appear in the workbooks. Essential in the use of the workbooks are supplementary readings for a background of the history, development and application of the concepts encountered in this course of experimental studies.

Most of the units include both a Student Manual and a Teacher Manual. In some units, however, the same booklet serves as Student Manual and Teacher Manual.

1. Nature of Physical Science: Student Manual
   Nature of Physical Science: Teacher Manual
Inaccessible Die Systems (Apparatus)

The student begins by using his everyday experiences to make his own observations, gather his own data and develop his own scientific method. The experiments move from familiar intuitive type problems requiring little or no use of measuring devices to the more abstract, typically "scientific" problem where measurement and analysis of numerical data is a crucial part of the experiment. The patterns that are established in this unit are repeated systematically in the others. Thus, the universality of the methods of science are illustrated by showing the development of the concepts in the other units to be variations of a fundamental theme.


Chemical Slide Rule (Apparatus)

This unit develops three major concepts: (a) chemical elements are the primary substances of which all other substances are composed; it also points out the value of the general concept of an 'elemental' substance, which is a recurring theme in science, (b) a knowledge of the patterns of chemical combination of the elements is an essential ingredient to the theory of chemistry; it enables us to predict the possibility of the outcome of chemical reactions, and (c) the
property of chemical activity is an empirical measure of the relative combining tendencies of elements that are in the same chemical class. A knowledge of this property of chemical elements enables us to determine the probability of the outcome of chemical reactions.

3. Chemistry, Part 2 - A Microscopic View
   Student Manual and Teacher Manual

   Organic Rummy Cards (set of 90 cards)
   Organic Chemistry Information Cards (set of 27 cards)
   This unit consists of four chapters: I, General Introduction; II, The Chemical Bond, covering the structure of the Atom, the ionic bond, and the covalent bond; III, The Patterns of Organic Chemistry, covering molecular models, extracting patterns from experimental data, hydrocarbon classes; IV, The Role of the Chemical Bond in Determining Chemical Properties, covering chemical activity, isomers, and experimental determination of molecular structure.


   This unit is divided into three sections; each sheds light on a different aspect of the properties of gases. The
first section is devoted to an experimental study of the macroscopic properties of gases. In this section, three basic experiments are outlined to provide guidelines for an experimental study of the relationships between the parameters of a gas. The objective of each of these experiments is to provide information from which we can obtain mathematical expressions describing those relationships. In each of these investigations several gases are studied to assure that the relationships discovered are properties of the gaseous state in general and not a feature of a particular gas. In the second section we seek a more fundamental understanding of these laws by studying the Kinetic Theory. In that study the elements of the Kinetic Theory of Gases are introduced and their logical consequences pursued. In the final section, a composite of the three macroscopic laws, called the Ideal Gas Laws, is compared to the experimental results of gases, and some of the limitations of the gas laws are pointed out.

7. Light: Student Workbook and Teacher Manual

This unit consists of four chapters: I, Historical Views; II, A Closer Look at Waves and Particles; III, Geometrical Optics; IV, Physical Optics. Experiments include work on white light dispersion; colored objects; a chemical reaction produced by light; and determination of the wavelength of light using the double slit interference method.
The course consists of eight units of study and 42 laboratory experiments geared to the topics. There is a Teacher's Guide for the eight topics and both a Student Workbook and Teacher's Guide for the experiments. In a one semester course, the teacher selects about five units to be taught for about three weeks each, with Units 1 and 3 considered as the basic units of the course.

1. Teacher's Guide to Classroom Discussions for Biology

   This work offers a general introduction and the eight units of study. Points are illustrated by samples of classroom dialogue and activity. The contents include:

   Introduction, Principles for Structuring the Course (approaches to the inductive presentation of the concepts to be conveyed); 1, Nature of Science; 2, Evolution (Theories and evidence of evolution above the species level); 3, The Cell (Evolution of the cell; cytology by light and electron microscope); 4, Reproduction, Growth, and Development (Animal and human); 5, Genetics (Inheritance; probability, chromosomal behavior, chemical basis of heredity); 6, Metabolism and Regulatory Mechanisms (Nutrition; systems supporting cell environments); 7, The Variety of Living Things (Systems of classifications; groups of organisms); 8, Ecology (Abiotic environment; species and the biotic environment).

Laboratory Activities for Biology: Student Manual
Laboratory Activities for Biology: Teacher Manual

The experiments, which are geared to the eight topics,
include the following:

1, What is an experiment? Scientific Reports; 2, Weighing and Measuring; 3, Diffraction of Light into its Spectrum; 4, The Microscope and Microscopy; 5, Sterilizing and Sterile Technique; 6, Effect of Ultraviolet Light Radiation on the Color of Serratia Marcescens; 7, Buffers and Indicators; 8, Coacervates and Emulsions; 9, Water Content of Various Tissues and Cells; 10, Cell Types; 11, Types of Foods Found in Cells and Tissues; 12, Diffusion, Osmosis and Active Transport; 13, Activities of Enzymes; 14, Fermentation and Aerobic Respiration Compared; 15, Chromosome Movements during Cell Division; 16, Cell Division; 17, The Phyla of the Animal and Plant Kingdoms; 18, Comparative Anatomy of some Skeletal Features; 19, Dissection of the Fetal Pig; 20, Sexual Reproduction and Vegetative Reproduction (Without Respect to Sex); 21, Reproductive Structures in Flowering Plants (Angiosperms); 22, Seed and Fruit Production in Flowering Plants; 23, Monocot and Dicot Seeds, Seedlings and Leaves; 24, Histology of the Female Reproductive Tract, 25, Histology of the Male Reproductive Tract; 26, Response of Animals to Pregnancy Urine Hormone; 27, Transcribing DNA, mRNA and tRNA to Sequence a Protein; 28, Do Environmental Factors Affect the Action of Genes?; 29, The Inheritance of Genetics Traits; 30, Searching for Bacteria Resistant to Streptomycin and Increased Salt Concentrations; 31, Inheritance of Specific Proteins; 32, Photosynthesis and the Synthesis of Starch; 33, Digestion of Foods; 34, Measurement of Oxygen
Use; 35, Urinalysis (Urine Analysis); 36, Reflex Action; 37, Influence of Thyroid Hormone on Rate of Development; 38, A study of Plant Communities; 39, Succession from one Environment to Another; 40, Effect of Physical and Chemical Factors on Animals; 41, Termite-Flagellate Interaction; 42, Growth of a Population.

The teacher's guide also includes introductory remarks for teachers, lists of materials and equipment, methods for making solutions and other preparations, suggestions for introductory discussions with the class, and procedures for doing the various exercises. It contains answers to discussion questions, but does not give sample data for the experiments. The material has enough flexibility to allow the teacher to express his or her own creativity, yet structured enough to give the student a feeling that he is proceeding properly through the activities.

Ideas and Their Expression II
(Humanities)

Man and his Creative Awareness - Teacher Manual

The sequences are as follows:

African and Afro-American Writing: Students deal with African and Afro-American literature in a manner that will show the similarities and differences between the two; their explorations include readings of African and Afro-American
novels, short stories, poetry, and dramas. Numerous student projects are described.

Dance and Drama in the Classroom: A diverse, multifaceted sequence in which the classroom becomes a theater stage and a dance studio. Many ways into dance, through student activities, are furnished, and relationships to other sequences are also developed between, for instance, sacred dancing and Man's stance as Mythmaker. Original dance and dramatic invention is stressed as a means of understanding how the combination of mediums heightens the possibilities for communication.

Looking at the Visual Arts: A group of writings and related exercises, using slides, videotape, and films from the material side of the sequence, and an art workshop to sensitize students to the scope of the visual arts deals with the participatory angels of creative involvement. A guide for establishing an art workshop as an integral part of the course is detailed.

Looking at Music: Through the use of all forms of black music, as well as "found" music (simple compositional techniques for non-musical people students arrive at an understanding of the scope of music and the expressive possibilities of the form. Copious use is made of commercial recordings and tapes prepared by the Institute for Services to Education staff.
The Stances of Man: A group of materials that aid students in experiencing and recognizing the possible attitudes of man toward life, toward the world, and toward the universe. In assuming these attitudes man takes on one of three primary identities.

1. Mythmaker - through the identification (both conscious and unconscious) of heroes and heroic acts, and in the use of stories to develop their religious and philosophical ideals.

2. Protester - against the particular order in which he finds himself, whether social, psychological, moral, religious, or political.

3. Witness - to the essential order and coherence that he finds beneath the apparent chaos around himself.

Slide Sets
Afro-American Artists: New York and Boston (38 slides)
A Means for Approaching the Visual Arts through Students' Projects in Photography (32 slides)
A Survey of Afro-American Artists (20 slides)

Tape Sets
(Each tape is 1,800 feet and runs at 3 3/4 IPS)
6 tapes on various aspects of religious and secular black music.
1 tape of Afro-American poets reading their poetry.
Common Elements of Modern Knowledge

(Philosophy)

African World-View: Student Manual

This sequence undertakes the consideration of African myths of creation, of God, of death; African religion; African philosophy; and African moral and jurisdictional principles. It offers a non-Western approach to problems that proves upon analysis to be universal.

Philosophy of Religion: Student Manual

This sequence concerns the nature of religious experiences through the analysis of the Bible, and the social criticism of religion (Christianity) by Black theology.

Social and Political Philosophy: Student Manual

This sequence examines specifically the basic social presuppositions. In doing this, Marxian analysis is introduced to establish the theoretical frame of reference; the nature of Marxism and Black Liberation; and the nature of Black liberation.

Epistemology: Student Manual

This sequence examines and analyzes the problems of human knowledge, the problem of belief, the problem of establishing truth, and the problem of gathering truth, and the problem of gathering evidence. It analyzes claims to knowledge in both the African and Western traditions.
Philosophical Inquiry: Teacher's Manual

This publication covers all four sequences.
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VITA

Bobbie Franklin Wells, career educator, received her early training in the public schools of Dallas, Texas, her place of birth. She received the B.A. degree in Foreign Languages from Fisk University, where she was a third generation graduate.

Appointment as a teacher in the Jack Yates Senior High School in Houston, Texas, began a career in teaching French and Spanish which has continued to develop in this direction. In Houston she earned the M.A. degree from Texas Southern University, began doctoral studies at the University of Houston and had earned the Administrator's Certificate when she returned to Dallas to become associated with Bishop College.

For several years Dr. Wells served as Assistant Professor of Romance Languages (French and Spanish) at Bishop College, then as Dean of Women and Assistant Professor of Language Education. While serving in the capacity of Dean of Women, Dr. Wells became interested in the effectiveness of the Experimental Curriculum Program at Bishop College which is the basis of this research.

Presently, Dr. Wells is associated with the Dallas Independent School District. She is a member of the American Association of Teachers of Foreign Languages, the
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She has two daughters -- Bobbie Wells Gordon, senior anthropology student at California State at Los Angeles, and Robin Elizabeth Wells, senior student at the Bishop Dunne High School in Dallas, Texas.