

IN-GROUP AND OUT-GROUP SOCIOMETRIC CHOICES FOR
TWO GROUPS OF COLLEGE STUDENTS EXPERIENCING
DIFFERENT EDUCATIONAL PROCEDURES

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TWO GROUPS OF COLLEGE STUDENTS EXPERIENCING
DIFFERENT EDUCATIONAL PROCEDURES

THESIS

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CHAPTER I

INTRODUCTION

Importance of the Problem

The student should be considered as a responsible interested person. The Christian college has a right and a duty, once having admitted such a person, to expect many things of him. This does not mean putting him into a mould of conformity, but freeing him in a community of responsible freedom, exposing him fully, helping him to find himself and develop to his fullest capacity.

Such a freedom that stems from both self-discipline and commitment is one of the key lessons the Christian college offers (1, p. 2).

Now more than ever before, because of rapid evolution in modes of living, the responsibility of higher education demands the development of mature men and women who can function effectively in their environment. Many higher education institutions are conducting research programs in an attempt to determine core curriculums designed to discharge their responsibilities in keeping with their institution's philosophy.

A Ford Foundation grant has made it possible for Austin College of Sherman, Texas, to inaugurate the Austin College Plan which seeks to take a new look at a total college program, one designed to make all the lessons of college years, those learned in class and in all other campus experiences,

constructive ones, contributing to the development of mature men and women capable of dealing effectively with their environment.

Purpose of the Study

The purpose of the study was to determine the effectiveness of the social and interpersonal aspects of the Austin College Plan of educational development by carrying out a plan of evaluation designed by the Hogg Foundation of the University of Texas and the Psychology Department of North Texas State College.

Background and Significance of the Problem

The Austin College Plan assumes the student's responsibility for self-direction and self-discipline early in his college career. It seeks new answers to these questions: What are the responsibilities of the liberal arts college? How can it help its students most and perform its responsibilities most effectively (1, p. 1)?

The academic portion of the Austin College Plan has four major objectives. These are:

1. To acquaint the student with the more basic and essential elements of our cultural heritage.
2. To make what he learns more meaningful and more useful through a better understanding of the interrelationship of all learning.
3. To stimulate in the student a greater responsibility, initiative, creativity, and zest for learning.

4. To enable both students and faculty to utilize their time, their skills and their talents more effectively in the pursuit of learning (1, p. 2).

The Austin College Plan offers, in a two-year sequence, at least equal academic content with that included in conventional freshman and sophomore courses. There is overlapping of subject matter in related courses when they are taught by departmental methods. The Austin College Plan eliminates this overlapping (1, p. 2).

The three major academic areas are mathematics-science, humanities, and linguistics. In the mathematics-science area students begin with a concentration on mathematical principles. As they become familiar with these tools, they progress into physics and its related fields--astronomy, electronics, and atomic theory--learning as they go the mathematics such studies require, not as useless theories but as purposeful systems of thought. In the second year their science studies lead them into chemistry, geology, and biology. This two-year sequence is designed not only to furnish a foundation for the student interested in advanced work in scientific fields but also to help him understand the value of scientific method which has become necessary to modern liberal education (1, p. 2).

Similar procedure was followed in the other two academic areas, humanities and linguistics. In the humanities, students study philosophy, religion, fine arts, literature,

history, political science, psychology, sociology, and economics presented within the general framework of historical development. The freshman year's work began with brief study of primitive culture; then more detailed investigation of the Egyptian, Babylonian, and Assyrian societies, including their history, art, and religion, was made. These studies provided historical background for extensive study of the Old Testament. Then the student's attention turned to an examination of Greek culture, which carried with it an emphasis on philosophy and the arts. Next, a study was made of the Roman Republic and its principles of economics and government. Against this background was introduced a detailed study of the New Testament, and later a study was made of the historical effects of Christianity on the Roman Empire. Concluding the first year's work in humanities was a study of the Medieval World, its social organizations, literature, and art. The sophomore year's work covered the Renaissance and Reformation, the Age of Reason, scientific and social revolutions, the Eastern cultures, modern society and world affairs, and American institutions. In each unit of study in the humanities the classical approach to problems was examined with reference to the contemporary situation (1, p. 2).

The third academic area, linguistics, involved study of English in conjunction with a foreign language, either

French or German. Its goal was to give the student a better understanding and usage of his own speaking language while he was gaining a speaking and reading knowledge of another, including some understanding of the culture which produced it.

Instead of conventional three-day-a-week classes, work was done within blocks of time set aside for each area, as the subject demanded--intensive lectures one week by a visiting authority, concentrated individual research at another time (1, p. 2).

Thirty-two freshman students were admitted to the program to serve as a pilot study group for the Plan. The academic year was not divided into traditional semesters. While more than six hundred students in the regular program were taking semester examinations, students in the special program continued to meet classes. Although tests were given at the completion of each unit of study, and reports of progress were available, only a single grade in each of the three areas was given at the end of the year's work. This interdepartmental and interdisciplinary approach to educational development will be adopted by Austin College as the basic freshman and sophomore required course of study, if the overall evaluation indicates significant increased effectiveness (1, p. 2).

Subjects

The thirty-two male and thirty female freshman student subjects for this investigation were matched on sex and intelligence and placed in experimental and control groups. They were all students at Austin College in Sherman, Texas, a north Texas college town with a population of approximately fifteen thousand. The age range was approximately seventeen to twenty-three.

Assumptions and Hypotheses

This particular evaluation of the Austin College Plan of educational development is concerned with determining to what extent the subjects differ in developing social and psychological maturity under the Plan as compared with the conventional procedure of educational development.

To perform a part of the evaluation of the Austin College Plan, the principles of sociometric measurement of group structure were employed. The assumption was made that preferences of social configurations can be measured and represent the subject's desired social atoms (2).

The social atom is determined by the feeling projected by the subject through the social network and is called "tele" (3, p. 38). Tele exists on a continuum from psyche-tele to socio-tele (2). Psyche-tele is defined as social feeling based on spontaneous, friendly relationships,

whereas socio-tele is defined as social feeling based on association for the purpose work tasks (2). To be socially and psychologically mature, the individual must be able to function effectively at all points on the continuum.

To evaluate to what extent the experimental Austin College Plan has resulted in better developed tele, greater cohesiveness, group identification, and better development as individuals, as students, and as leaders, the following hypotheses have been formulated:

1. That the experimental group will receive significantly more choices than the control group, from the freshman class as a whole, and will choose significantly more among themselves than the control group in choosing whom they would like as associates "to run around with" in their free time.

2. That the experimental group will receive significantly more choices than the control group, from the freshman class as a whole, and will choose significantly more among themselves than the control group when choosing dormitory roommates.

3. That the experimental group will receive significantly more choices than the control group, from the freshman class as a whole, and will choose significantly more among themselves than the control group when nominating class officers.

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CHAPTER II

RELATED RESEARCH

This timely problem summarized in Chapter I incorporates basic sociometric processes supported by research conducted during recent years; however, this particular experimental design applies these processes in a relatively new manner in an attempt to arrive at an answer to the problem of developing an effective core curriculum at the higher educational level. Although such an approach is relatively new to other various approaches to the problem, the literature affords one with many accounts relating such attempts to answer the problem.

Moreno (7) states that no adequate change can be brought about as long as mankind is not a unified group and that proof has been uncovered which indicates that such a unity of mankind does exist. This unity distributes itself in space according to a law of social gravity which seems to be valid for every kind of grouping, irrespective of its membership. These tendencies may become apparent on the surface in the relations of individuals or groups of individuals as attractions and repulsions. These attractions and repulsions must be related to an index of biological, social, and psychological facts, and this index must be detectable; these

attractions and repulsions or their derivatives may have a near or distant effect not only upon immediate participants in the relation, but also upon all other parts of that unity which one calls mankind.

Moreno and Jennings (8), in a study of measurement of social configurations, state that cohesion of forces within a group can be measured through an analysis of choices made and choices received. Cohesion is expressed in units of tele which has been defined as "an inter-personal experience growing out of person-to-person and person-to-object contacts from the birth level on and gradually developing the sense for inter-personal relations." Cohesion would be very low, for instance, if a number of choices going to the individuals of a group were unreciprocated. There would be a surplus of choosing but a loss of tele because of the unreciprocated choices.

Bonney (3, pp. 275-286) conducted a study involving a follow-up on thirty-eight students to determine the constancy of their sociometric ranks. Subjects were students in Bonney's psychology classes over a period of two years. The hypothesis was tested that the average median differences in sociometric ranks for students followed over any two consecutive semesters will not be more than three or four points in difference. The results verified this hypothesis and also verified the hypothesis of relative

constancy. A few students made practically no changes, while a few others changed as much as fourteen to seventeen points in rank. However, the median of the class supported the hypothesis that the average median differences will not be more than three or four points.

Bonney (2) made a study of social success levels among primary grade children in Denton, Texas, in 1938. The purpose was to determine factors related to social success and to discover means of raising the social acceptance of those who were below average in social acceptance. Bonney concludes that children are not liked or disliked on the basis of two or even a half dozen traits, but on the basis of the impression they make as total individuals.

Cooper and Young (5, pp. 513-525) conducted an extensive study of eleven public school classroom groups in a California city. Their purpose in conducting the study was to determine what factors were associated with popularity. By means of sociometric devices, rating scales, inventories, and questionnaires, Cooper and Young found the following attributes to have the greatest relationship to popularity: attractiveness in facial appearance, a sense of personal worth, acceptable social standards, and extroversion.

Campbell (4), under the auspices of the Bureau of Naval Personnel, in his research on leadership and its effects upon the group, defines leadership as "the contribution of

a given individual to group effectiveness, mediated through the direct efforts of others rather than himself." This concept of leadership was found to suggest two hypotheses: that the behavior of some individual will have an effect on group performance and that this effect will adhere to the individual and will be characteristic of him in other situations. Campbell sought to determine individual differences among potential leaders by introducing measures of group effectiveness and found description by subordinates correlated as high as .67 with leadership ability revealed by level of organization; however, he warned that stereotyped attitudes may be reflected.

Thompson (9, pp. 648-654) introduced a program which took advantage of daily contacts made while residing in the college dormitories. Student residents learned through routine social interaction and through working with others in various group activities. The activities were so structured to vitalize and enrich the daily routine and stimulate interest in group procedures and techniques. It was found that wherever there was a good program and good acceptance a high degree of morale resulted. Two factors were found to be most influential in whether a program was good or not: the personality of the head resident in the dormitory and the size and layout of the living unit of the dormitory. It was found in very large halls that it is extremely difficult

to achieve social orientation and development, because these traits normally originate in smaller groups and work into larger ones. Such considerations point out a possible way of bringing the residence hall nearer to the center of the field of learning experiences rather than on the periphery where it now stands.

Bonner (1, pp. 261-265) took a comprehensive look at the group dynamic approach to education and summarizes as follows. Much research, both theoretical and operational, has been published on the group dynamic approach to education. Overall, it has left a positive mark on educational theory and practice; however, the belief that education is a problem in human relations, that it involves people and not primarily subject matter, dictates such a conclusion. Research data on group-centered education do not consistently support this conclusion. Results obtained by Asch, Wispe, and Johnson leave much in doubt regarding the effectiveness of group-centered or non-directive teaching. The instances in which a directive educational leader can effect planned but desirable results are too numerous to be ignored, and the dangers of oversimplification in instigating group-centered education are also numerous and must be vigilantly guarded against. Students generally prefer structured or directive teaching much more than they do the democratic group-centered approach. Significant is the

fact that in Wispe's study there was no sharply distinguishable superiority in learning in either type of classroom instruction. It seems that almost the only thing which group-centered students derive from their experience, which is not shared by those in the conventional classroom, is a significantly greater amount of social and emotional satisfaction, but more research is needed to clarify this position. On the basis of published research on this subject, it can be concluded then, with the usual caution, that non-directive education, embodying the democratic principle of free discussion and mutual respect of teachers, pupils, administrators, and parents, can effect valuable educational experiences to all concerned. When schools, their curricula, and the methods of teaching become truly group centered, then will educational programs become revived and equal to the task they face.

Jacob and his committee (6) conducted a continuation of a study by Moore, who studied the place of religious and moral values in programs of general education at twenty-six institutions. Moore found the social sciences "characterized by great ambiguity and confusion with regard to value problems." He urged more detailed study of the aims, rationale, and effects on student beliefs and conduct, of the instruction provided in the introductory courses and other parts of the curriculum fulfilling an integrative, or general, educational function. His common assumption lies back of the

commitments to a general higher education than that furnished by high schools--an assumption that there are civilizing values which need to be communicated to and through any person who goes to college and expects to live primarily by means of a trained mind.

The central problem of Jacob's survey of studies was to see what changes do occur in students' patterns of value during college and to what extent such changes stem from exposure to various types of social science instruction in the general part of the curriculum. Jacob's survey was primarily concerned with that part of the curriculum which fulfills a general education function in the social sciences.

Specifically, data were surveyed relative to the following questions:

1. What are the main contemporary patterns of value among American students?
2. How much of an overall difference does the college experience make in students' values?
3. How much are students' values influenced by the content of the instruction they receive, particularly in social science?
4. What impact is attributable to the instructor?
5. Do changes in students' values reflect the methods by which they have been taught?
6. Does a more significant development of values occur at some institutions than at others? If so, what characterizes these potent institutions?
7. To what extent does a student's type of personality filter his college education and control its effect upon his values (6)?

In conclusion, no specific curricular pattern of general education, no model syllabus for a basic social science course,

no pedigree of instructor, and no wizardry of instructional method which should be patented for its impact on the values of students was discovered. Student values do change to some extent in college; however, the impetus does not come primarily from the formal educational process. Ability to change students' values is found in few institutions but lies mainly in the individual student and his value-laden personal experiences imaginatively integrated with his intellectual development.

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CHAPTER III

METHODOLOGY AND PROCEDURE

Introduction

This study, as stated in Chapter I, is designed for the purpose of determining whether the Austin College Plan of educational development is significantly more valuable than conventional higher educational methods in developing the social and psychological maturity of the student. To determine these factors a sociometric test was given to the freshman class population. Subjects were asked to make three choices: whom they preferred to be associated with relative to dormitory roommates, whom they preferred to run around with in their free time, and whom they preferred as their leaders. From the sociometric data yielded, it was possible to test the following hypotheses to evaluate to what extent the Austin College Plan has resulted in better developed tele, greater cohesiveness, group identification, and better development as individuals, as students, and as leaders:

1. That the experimental group will receive significantly more choices than the control group, from the freshman class as a whole, and will choose significantly more

among themselves than the control group in choosing whom they would like as associates "to run around with" in their free time.

2. That the experimental group will receive significantly more choices than the control group, from the freshman class as a whole, and will choose significantly more among themselves than the control group when choosing dormitory roommates.

3. That the experimental group will receive significantly more choices than the control group, from the freshman class as a whole, and will choose significantly more among themselves than the control group when nominating class officers.

Gathering Data

The pertinent data were gathered by means of a mimeographed questionnaire in which the subjects were asked to indicate three choices for each criterion. They were told that the information would be used to aid the administration in planning the courses to be offered for them in the future. They were also informed that the planning was being partially conducted by the Hogg Foundation of the University of Texas. In order to administer the sociometric questionnaire, the freshman population was assembled in the school auditorium and allowed as much time as desired to make their choices. As each student completed the

questionnaire, he was permitted to leave the assembly and placed his questionnaire on a table as he left.

Classifying Data

From the freshman population two groups were selected, an experimental group and a control group, on the basis of those eligible, as constituted by being in the upper three quartiles on the college entrance examinations, and interest in the program. Each group contained sixteen male and sixteen female subjects matched on I. Q. In order to prepare the raw data for purposes of statistical manipulation, two classifications were made. The choices given both the experimental group and the control group from the freshman population were compiled to test the hypothesis that the experimental group will be chosen significantly more than the control group on each criterion. Also compiled were the choices the experimental and the control groups made within their respective groups to test the hypothesis that the experimental group would choose significantly more among themselves than the control group on each criterion.

Statistical Method

For purpose of statistical analysis each of the three hypotheses was divided into two sections. The first section was that part of each hypothesis which measured the choices for the experimental and the control groups from the total

freshman population. The data in Table III were tabulated to test the hypothesis that the experimental group would receive significantly more choices than the control group, on each hypothesized criterion, from the freshman class as a whole. The following Fisher's t formula for related groups matched on mean and standard deviation of intelligence was utilized:

$$\frac{M_1 - M_2}{\sqrt{\left(\frac{\sigma^2}{N_1} + \frac{\sigma^2}{N_2}\right) \left(1 - r^2\right)}}$$

The second section of each hypothesis was that part which measured the choices for the experimental and control groups from within their respective groups. The data in Table IV were tabulated and Fisher's t formula for related groups matched on mean and standard deviation of intelligence was also calculated to test the hypothesis that the experimental group would choose significantly more among themselves than the control group on each hypothesized criterion.

CHAPTER IV

STATISTICAL ANALYSIS AND SUMMARY OF FINDINGS

The results of statistical analysis are found in the following tables. In Table I choices of the experimental and control groups from the total population, as computed from Table III, were compared to determine whether either group was chosen significantly more than the other group was chosen.

TABLE I

FISHER'S t RATIOS AS RESULTS OF STATISTICAL MANIPULATION OF DATA IN TABLE III

Hypothesis	Group	Mean	Standard Deviation	r	Degrees Freedom	t	P
Friends	Experimental	2.97	2.48	.91	27	.32	...
	Control	2.50	2.31				
Roommates	Experimental	2.33	2.07	.93	27	.01	...
	Control	2.30	1.79				
Leadership	Experimental	4.07	5.05	.97	27	3.09	.01
	Control	2.47	2.65				

The results of statistical manipulation yielded a Fisher's \underline{t} ratio of .32 when choices were compared from the total freshman population for the experimental and the control groups on friends and a Fisher's \underline{t} ratio of .01 when choices were compared from the total population for the experimental and the control groups on roommates. Neither of these Fisher's \underline{t} ratios indicated that either group was chosen significantly more than the other by the total freshman population. These two hypotheses were rejected. When the choices from the total population for the experimental and control groups on leadership were compared, a Fisher's \underline{t} ratio of 3.09 indicated that the experimental group was chosen more by the total freshman population. This difference was significant at the .01 level; therefore, this hypothesis was accepted.

In Table II choices of the experimental and control groups from within their respective groups, as computed from Table IV, were compared to determine whether either group chose within its respective group significantly more than the other. The results of statistical manipulation yielded a Fisher's \underline{t} ratio of 4.77 when choices received by the experimental and control groups from their respective groups on friends were compared and a Fisher's \underline{t} ratio of 2.78 when choices received by the experimental and control groups on leadership were compared.

TABLE II

FISHER'S t RATIOS AS RESULTS OF STATISTICAL
MANIPULATION OF DATA IN TABLE IV

Hypothesis	Group	Mean	Standard Deviation	r	Degrees Freedom	t	P
Friends	Experimental	1.60	.84	.79	27	4.77	.001
	Control	.63	.69				
Roommates	Experimental	1.20	.87	.81	27	1.39	...
	Control	.77	.76				
Leadership	Experimental	.79	.89	.76	27	2.78	.01
	Control	.40	.52				

Each of the Fisher's t ratios indicated that the experimental group was chosen by its own subjects more than the control group at the .001 and .01 levels of significance, respectively. Therefore, these two hypotheses were accepted. When choices received by the experimental and control groups from their respective groups on roommates were compared, a Fisher's t ratio of 1.39 was yielded which indicated that neither group was chosen significantly more than the other. This hypothesis was rejected.

It appears possible that factors associated with selection of the experimental group account in part for the

positive experimental results in choosing friends and leaders but not in choosing roommates. The low frequency of choosing roommates is evident in the choices of the total freshman population for the experimental and the control groups and the choices from within their respective groups. This is explained by the fact that many of the students do not reside in the college dormitories and were not available for choosing. The fact that those interested in the experimental program were allowed to participate in it is suggested as a possible reason for the highly significant rate of choosing within the experimental group on friendship choices.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to show whether there was a significant difference in the effectiveness of the social and interpersonal aspects of the Austin College Plan of educational development as compared with conventional methods. A group of thirty-two male and thirty female freshman students at Austin College in Sherman, Texas, were placed in experimental and control groups for evaluation of the Plan. At the end of the school year the results of the Plan were measured by a sociometric survey to determine choices of friends, roommates, and leaders from the total freshman population and from within the respective groups. It was found that the experimental group was chosen significantly more by the total freshman population when leaders were chosen but not when friends and roommates were chosen. It was further found that the experimental group was chosen significantly more by its own subjects when friends and leaders were chosen but not when roommates were chosen. The results were consistent with many other researches in this field; however, it is suggested that longitudinal research be conducted to give a more valid indication of the effect of the Austin College Plan. One procedure that might strengthen a

follow-up study would be to give a pre-sociometric test in the early fall and then to give a re-test in the spring to determine if any change in choices occurs as a result of the Plan.

APPENDIX

TABLE III

NUMBER OF CHOICES RECEIVED BY THE EXPERIMENTAL
AND CONTROL GROUPS FROM THE FRESHMAN CLASS
ON FRIENDS, ROOMMATES, AND LEADERSHIP

Friends		Roommates		Leadership	
Experimen- tal Group	Control Group	Experimen- tal Group	Control Group	Experimen- tal Group	Control Group
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	1	0	0	0
1	0	1	0	0	0
1	0	1	1	0	0
1	0	1	1	0	0
1	1	1	1	0	1
1	1	1	1	0	1
2	1	1	1	1	1
2	1	2	1	1	1
2	2	2	2	1	1
2	2	2	2	1	2
2	2	2	2	1	2
2	2	2	2	1	2
2	2	2	2	3	2
2	2	3	2	3	2
3	2	3	2	5	2
3	3	3	3	5	2
4	3	3	3	7	3
4	3	3	3	8	3
4	3	3	3	8	4
4	4	4	4	11	4
4	4	4	4	11	4
5	4	4	4	12	4
8	4	4	4	12	6
9	5	4	4	13	7
9	5	8	5	18	8
9	6	9	5		8
	8		5		8
	9		6		9

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