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An experimental study of changes in self-concepts and ideal self-concepts

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AN EXPERIMENTAL STUDY OF CHANGES IN SELF-CONCEPTS AND IDEAL SELF-CONCEPTS

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

I. THE PROBLEM

Statement of the problem. The problem under investigation was to determine if the techniques of client-centered therapy, as applied to a student group, would be successful in bringing about a significant change in the relationship between students' self-concepts and their ideal self-concepts.

Need for such an investigation. This study grew from the expressed desire of students to learn how to understand themselves and others, and from the investigator's own interest in attempts to evaluate changes during client-centered therapy.

A review of the literature pertaining to experimental studies of small groups and to teaching of the first course in psychology indicated that researchers have been greatly interested in studying the changes that occurred within the individual in client-centered therapy and in democratically taught classes. The investigation reported here attempted to measure and evaluate the changes in the individual's perceptions of his self and ideal self which occurred in a student-centered class.

Statement of the hypothesis. The thesis of this experiment was that there would be significant changes in the relationships between students' self-concepts and their ideal self-concepts in a class which was conducted in a student-centered manner.

II. DEFINITIONS OF TERMS USED

Self-concept. Carl Rogers defines the self-concept or self-structure as ". . . an organized, fluid, but consistent conceptual pattern of perceptions of characteristics and relationships of the 'I' or the 'Me', together with values attached to these concepts."[1]

Ideal self-concept. The ideal self-concept is defined here, as in John Butler and Gerard Haigh's study, to mean "the organized conceptual pattern of characteristics and emotional states which the individual consciously holds as desirable (and undesirable) for himself."[2] Thus, it is the desired self.

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[1] Carl R. Rogers, Client-Centered Therapy (Boston: Houghton Mifflin Company, 1951), p. 498.

[2] John M. Butler and Gerard V. Haigh, "Changes in the Relation Between Self-Concepts and Ideal Concepts Consequent Upon Client-Centered Counseling," Carl R. Rogers and Rosalind F. Dymond (Eds.), Psychotherapy and Personality Change (The University of Chicago Press, 1954), p. 56.

Student-centered. Birney and Mc Keachie[3] have listed some of the ways in which student-centered teaching may differ from instructor-centered teaching. This list is reproduced in Table I.

III. A BRIEF STATEMENT OF EXPERIMENTAL PROCEDURE

Each student in a beginning class in psychology ordered 100 self-referrent statements on a continuum from "least descriptive" to "most descriptive" of his self and his ideal self. The correlation between his self and his ideal self was determined before and after participation in a student-centered class. The first and second sets of scores were treated statistically to obtain the standard error of the differences, the t value, and the level of confidence.

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[3] Robert Birney and Wilbert Mc Keachie, "The Teaching of Psychology: A Survey of Research Since 1942," Psychological Bulletin, 52:53, January, 1955.

TABLE I

DIMENSIONS UPON WHICH STUDENT-CENTERED AND INSTRUCTOR-CENTERED METHODS MAY DIFFER

Student-Centered	Instructor-Centered
Goals	Goals
Determined by group	Determined by instructor
Emphasis upon affective and attitudinal changes	Emphasis upon intellectual changes
Attempts to develop group cohesiveness	No attempt to develop group cohesiveness
Classroom Activities	Classroom Activities
Much student participation	Much instructor participation
Student-student interaction	Instructor-student interaction
Instructor accepts erroneous or irrelevant student contributions	Instructor corrects, criticizes, or rejects erroneous, or irrelevant student contributions
Group decides upon own activities	Instructor determines activities
Discussion of students' personal experiences encouraged	Discussion kept on course materials
De-emphasis of tests and grades	Traditional use of tests and grades
Reaction reports	No reaction reports

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this chapter is to report those studies that are related to the teaching method under investigation here.

I. LITERATURE ON TEACHING METHODS IN PSYCHOLOGY

One needs to do little more than glance at the reports prior to 1942 to see that investigators evaluating teaching methods had been primarily concerned with how well students learned facts and principles. Dael Wolfe, in a survey of the literature before 1942, stated that:

> Present examination techniques are best suited to the measurement of the students' knowledge of vocabulary, facts, and principles. . . . Until it is possible to get reliable measures of the extent to which . . . course objectives are obtained, it is impossible to give complete answers to questions concerning the relative merits of different teaching methods. Such data as now exist indicate that large classes are as effective as small ones and that the lecture is as effective as the class discussion in teaching the facts and principles of psychology.[4]

In 1949, Volney E. Faw, who was interested in experimenting with educational methods that would bring about emotional growth, completed a study of personal

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4 Dael Wolfe, "The First Course in Psychology," Psychological Bulletin, 39:707, November, 1942.

relationships within the college classroom. Faw's class of 102 students was divided into groups which met two hours a week for lectures and two hours a week in three discussion groups of thirty-four students. One of the discussion groups was conducted in a student-centered manner, one in an instructor-centered manner, and the other alternated between the two teaching methods. Faw's method of evaluating emotional growth was to ask the students to write anonymous comments about the class. The outcomes were compared with the control group, which was instructor dominated. Faw concluded:

> A greater amount of participation of a more personalized nature was noted in the group organized along psychotherapeutic lines. The indications are that the intellectual growth of members in the therapeutic section did not suffer but was enhanced somewhat by the relationship.[5]

In a similar experiment, Morton Asch proposed to evaluate the over-all effectiveness of non-directive teaching as compared to the traditional lecture-discussion method. He attempted to evaluate changes in students' intellectual, social, and emotional adjustment. Asch's 124 students were divided into one experimental and three control groups. Only the control groups were required to

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[5] Volney Faw, "A Psychotherapeutic Method of Teaching Psychology," The American Psychologist, 4:109, April, 1949.

listen to lectures. The students in the experimental group were allowed to choose their own goals, select most of their own reading materials, write weekly reaction reports based on their feelings about any experience, and supply their own grades at the end of the term. On the final examination for the course the instructor-centered group scored significantly higher than the student-centered group. It is important to note, however, that the student-centered group was told that the final examination would not affect their grades. The results of the Bogardus Social Distance Scale indicated no significant differences between the two groups. However, on the M. M. P. I., blind analyses and interpretations indicated that the non-directive group improved to a significantly greater degree than the control group in the area of emotional adjustment. Asch stated:

> . . . self-understanding and adjustment are the major objectives of a course of this nature. Non-directive teaching . . . offers greater possibilities than traditional methods in reaching these goals.[6]

Landsman, according to Birney and Mc Keachie,[7] conducted the most comprehensive study in this area. His

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[6] Morton J. Asch, "Nondirective Teaching in Psychology: An Experimental Study," Psychological Monographs, 65:20, 1951.

[7] Birney and Mc Keachie, op. cit., p. 54.

experimental design involved eight classes and three instructors who employed both student-centered and a more directed type of discussion organized around a syllabus. Measuring instruments were the Horrock-Troyer tests, Group Rorschach, M. M. P. I., autobiographies, a case history analysis test, and student reactions. The measures indicated no significant differences between groups due to teaching methods.

Bovard and Mc Keachie experimented with two classes to determine the effects of teaching methods. One group was taught by methods which emphasized the class as a group and the other method was the more traditional question-answer technique. On the final examination there were no significant differences between students' scores in the two types of classes. However, Bovard carried out a demonstration indicating the differences between the two classes. Recordings were made of the class discussions following the showing of a film, "Feeling of Rejection". Two clinical psychologists were asked to evaluate the nature of clinical insight shown. Both clinicians reported that the group-centered class showed much more insight and understanding

of the problems of the girl in the film.[8]

Lorraine Gibb and Jack Gibb have reported the effects of "participative action" groups in a course in general psychology. Eleven classes ranging in size from seventy-two to ninety-eight were involved in the study. Ten of the classes were taught using lecture-discussion methods. The eleventh class was taught by "participative action" methods. To provide a background for group discussions the students in the experimental group were required to read two standard texts, one "psychological novel", and selected articles. The instructor took less and less part in the discussions made by the group. They reached the following conclusion:

> The experimental group made statistically significant gains in role flexibility, self-insight, leadership and likeability ratings, and group membership skills. These gains were made with no apparent loss of normal content acquisition, as measured by traditional objective and essay examinations.[9]

Two classes, one an instructor-centered class in economics, the other a non-directive class in psychology,

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[8] Everett W. Bovard, "The Psychology of Classroom Interaction," Journal of Educational Research, 45:215-224, October, 1951; and Wilbert J. Mc Keachie, "Anxiety in the College Classroom," Journal of Educational Research, 45: 155-160, October, 1951.

[9] Lorraine M. Gibb and Jack R. Gibb, "The Effects of the Use of 'Participative Action' Groups in a Course in General Psychology," The American Psychologist, 7:247, July, 1952.

were compared by Gross[10], using a scale devised for measuring self-insight. Percentage of change in score from pre-course administration to post-course administration was obtained. The larger group increase and the greatest individual increase appeared in the non-directive class.

Mary Roseborough, in a report on experimental studies of small groups, stated that:

> We need not be further persuaded that group discussion processes have an effect on individual performance even though there is a selective process occurring in the reporting of studies. This proof has only opened up new and troublesome problems concerning the mechanisms by which this influence is achieved and the conditions under which such an empirical observation holds.[11]

II. LITERATURE ON SELF-CONCEPTS AND IDEAL SELF-CONCEPTS

Theoretical assumptions. The literature pertaining to Q methodology as an instrument for evaluating changes in self-ideal perceptions is rather meager. Therefore, a discussion of the rationale for the use of the instrument seems necessary.

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[10] Llewellyn Gross, "An Experimental Study of the Validity of the Non-Directive Method of Teaching," Journal of Psychology, 26:243-248, April, 1948.

[11] Mary E. Roseborough, "Experimental Studies of Small Groups," Psychological Bulletin, 50:279, July,1953.

Butler and Haigh state that:

> We start with the notion of Rogers that the self-concept consists of an organized conceptual pattern of the "I" or "me" together with the values attached to those concepts. This implies that many single self-perceptions, standing in relation each to the other, exist for the same individual. It is quite possible for the individual to order these self-percepts along a subjective or psychophysical continuum from "unlike me" to "like me".[12]

In order to help determine the values attached to these self-percepts, the ideal self-concept was introduced. The assumption is that the individual is able to make judgments about his self-perceptions and to order them along a continuum of value from "unlike me" to "like me" and from "unlike my ideal" to "like my ideal". If a given self-percept was placed on continuums according to these two judgments, self-concept and ideal self-concept, any discrepancy between the two placements would yield an index of self-value insofar as this one perception is concerned.[13]

The Q sort. Eli Bower studied three separate groups using an evaluation procedure based on "Q" methodology. He attempted to measure changes in self and ideal-self perceptions primarily to test the sensitivity of an evaluative procedure to three differing experiences. The pre-test and post-test statistics from the Mental Health

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[12] Butler and Haigh, op. cit., p. 55.

[13] Ibid., p. 56.

Institute group, the University group, and the research methods class led Bower to make the following statement:

> The results indicate that this methodology has differential sensitivity both to individual differences within groups and among groups themselves. The results further suggest that this methodology holds promise in attempting the difficult excursion behind the diaphanous but often impenetrable curtain of the "self-realization" objectives of education. The results are hopeful signs that what we say we do in workshops, courses, or institutes may indeed be subjected to systematic examination.[14]

Thomas Hanlon, Peter Hofstaetter, and James O'Connor used the California Test of Personality and a modified Q-sort technique to investigate the relationship between measures of adjustment and the congruence of the self-concept and ideal self-concept in a sample of seventy-eight high school students. Their conclusions were:

1. The correlation between the self-concept and the ideal self-concept tends to be positive.
2. Congruence between self and ideal self is a normally distributed trait.
3. The correlation between self-ideal congruence and total adjustment is positive and highly significant with regression being rectilinear. Therefore, the use of measures of self-ideal congruence in evaluating the extent of personality maladjustment appears justified.
4. The hypothesis which underlies the use of Q sorts in evaluating change in psychotherapy is confirmed.

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[14] Eli M. Bower and Peter J. Tashnovian, "Q Methodology. An Application in Investigating Changes in Self and Ideal Self in a Mental Health Workshop," California Journal of Educational Research, 6:204, November, 1955.

5. Intelligence and age show no significant relationship with self-ideal congruence and with measures of adjustment.
6. Maladjustment in a person need not require that his self concept be negatively related to his ideal self. Where the correlation is minimal (r less than .27), signs of maladjustment may already be manifest.[15]

A study by Butler and Haigh involved twenty-five clients who had come to the University of Chicago Counseling Center for counseling. The experimenters, in this study, were concerned with the sortings made by each client for self and ideal at pre-counseling, post-counseling, and follow-up. A Q sort technique was used to attempt to measure the hypothesized changes.

A set of 100 self-referrent statements was taken from therapeutic protocols available at the University of Chicago Counseling Center, by Butler and Haigh and reworded for clarity. These statements were printed on 3x5 cards and sorted by the clients to describe themselves as they were and again to describe themselves as they would like to be. The clients were instructed to place each card in one of nine piles arranged along a continuum from "least like"

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[15] Thomas E. Hanlon, Peter R. Hofstaetter, and James P. O'Connor, "Congruence of Self and Ideal Self in Relation to Personality Adjustment," Journal of Consulting Psychology, 18:217, June, 1954.

to "most like". A specified number of cards must be placed in each pile so as to achieve a quasi-normal distribution. Since each of the nine piles has an assigned value, the data may be analyzed by correlational methods.

> It should be noted that the forced sorting of these items into an approximately normal distribution is not a fundamental requirement. Transitive asymmetrical relations when applied to self-concepts and ideal concepts basically imply ranking. The form of the distribution and the sorting of the items into nine piles (this study involved eleven) represents the somewhat arbitrary introduction of a set number of ties into what is essentially a ranking situation. Since our concern was with the correlation between sorts, it is believed that neither the number of ties nor the form of distribution is a matter of serious concern as long as the joint distribution is normal. Indeed, we are of the opinion that the prescribed conditions are an advantage. Psychophysical considerations lead one to expect that forcing a sort leads to finer differentiations than uncontrolled sortings, whereas forcing a nontied ranking of as many as one hundred items might lead to fatigue and carelessness.[16]

The items were administered to three groups: an equivalent-control group, a client group, and an own-control group.

The client group consisted of twenty-five individuals for whom pre-tests, post-tests, and follow-up tests were available. The results indicated a pre-counseling correlation of -.01, a post-counseling correlation of .34, and a follow-up correlation of .31.

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[16] Butler and Haigh, op. cit., p. 57.

The equivalent-control group was selected to be roughly similar to the client group in age, sex, socio-economic status, and student-nonstudent status. These subjects were tested at the same intervals as the clients. The test results for sixteen of the equivalent-controls were available at the time the analysis of results began. The results indicated a pre-counseling correlation of .58, and a follow-up correlation of .59.

The own-control group consisted of fifteen clients who were tested at the time they requested counseling and later at the pre-counseling point. After entering counseling, they were tested at the post-counseling point and at follow-up. The results indicated a pre-wait correlation of -.01, and a pre-counseling correlation of -.01.

The authors inferred from these statistical results that there was a significant change in the client group's self-ideal relationships from pre-counseling to follow-up, that there was no significant change in the equivalent control group's self-ideal relationships from pre-counseling to follow-up, and that there was no significant change in the own-control group's self-ideal relationships from pre-wait to pre-counseling.[17]

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[17] Butler and Haigh, op. cit., pp. 55-75.

A Thematic Apperception Test study of these same clients was made by Dymond. T.A.T.'s were administered to the experimental group at pre-counseling, post-counseling and follow-up, and to the control group at similar intervals, to provide matched time samples. There were ninety-two coded records involved in this study. The rater had no identifying information about them. These records were read and assigned a score depending upon the inferred level of adjustment of the individual. A composite rating for each record was used which ranged from severely disturbed to well integrated. Dymond concluded:

> The clients who took part in this research have now been found to be less well adjusted before therapy than after on . . . different kinds of measures --their own self-descriptions . . . --and now this is again found on a blind rating of their T A T records. In this study the no-therapy control group was again discovered to be significantly better adjusted than the client group before their therapy and not significantly different from them after their therapy had been completed. The T A T ratings agreed . . . with the change in the correlation of their self and ideal sortings.[18]

Summary. A review of the literature pertaining to teaching methods in psychology has indicated that democratically taught classes are as effective as the lecture

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[18] Rosalind F. Dymond, "Adjustment Changes Over Therapy From Thematic Apperception Test Ratings," Carl R. Rogers and Rosalind F. Dymond (Eds.), Psychotherapy and Personality Change (The University of Chicago Press, 1954), p. 120.

type classes in teaching facts and principles. The literature has also indicated that there has been a tendency on the part of democratically taught classes to show more understanding of others and insight into their own behavior. The latter part of the chapter dealt with a study by Butler and Haigh in which they used the same Q sort statements utilized in the experiment reported in this study.

CHAPTER III

SOURCE OF DATA AND METHOD OF PROCEDURE

I. THE POPULATION

The eighteen subjects used were students enrolled in a beginning course in psychology at Humphreys College in Stockton. The purpose of the course was to orient the students to the scope of psychology and to some of the functions that psychologists perform. The course was one of the requirements for a Bachelor of Science degree in business administration. However, the majority of the students were not working toward the degree. There were thirty-one students enrolled in the course, but because many registered late or had to stay on the job, thirteen did not complete the four sorts.

II. THE MEASURING INSTRUMENT

The self-referrent statements utilized to measure the hypothesized changes were devised by Butler and Haigh.[19] These statements were listed in the report of a study by

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[19] Butler and Haigh, op. cit., p. 57.

Julius Segal[20] and are reproduced in Table IV, in the Appendix. The validity and reliability of these statements has been discussed in Chapter II, page 13.

III. METHODS OF PROCEDURE

Test instructions to the class. During the first class session the students were asked to take part in a research project. They were told that participation or nonparticipation in the project would have no effect on their grades for the course and that they would guarantee their own anonymity in the research results by using their driver's license number as the only means of identification. It was stated that if any individual, after taking the tests, decided against continuing in the project, he could destroy his part of the data. There were no dissenters.

The test instructions were given as follows: Each person has a pile of one hundred cards, and each card has printed on it a short statement that may refer to you. Will you please shuffle the cards thoroughly. Now sort the cards into two piles. The pile to your left is to contain

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[20] Julius Segal, "The Differentiation of Well and Poorly Integrated Clinicians by the Q-Sort Method," Journal of Clinical Psychology, 10:323, October, 1954.

those statements which you feel are not descriptive of you and the pile to your right is to contain those statements which you feel are descriptive of you.

After the students finished sorting the cards, each was given a printed form for recording the results of the next step in the procedure. The form for recording the self-referrent statements is presented in Figure 1. Instructions were given as follows: Turn to the pile of cards to your right, the one that you feel is descriptive of you. Look for the statement that is more like you than any of the others and when you find it, put the number of that statement in the little box provided for it in column eleven. When you have completed that, put the card aside out of your way. Sort the cards again and select two statements that you feel are more like you than the others in the pile. Enter their numbers in the two boxes provided in column ten. Continue this procedure, putting the used cards aside each time, until you come to column six, the middle column. Do not put card numbers in the middle column. If you have too few cards in the right hand pile, select the statements most like you from the left hand pile. If you have too many cards in the right hand pile, place them on the left hand pile. Then sort the cards that are left and select the statement that is less like you than any of the others. Enter the number of that statement in

Identification:_____ Age:_____

Date:_____ Sex:_____

Sort:_____ Job:_____

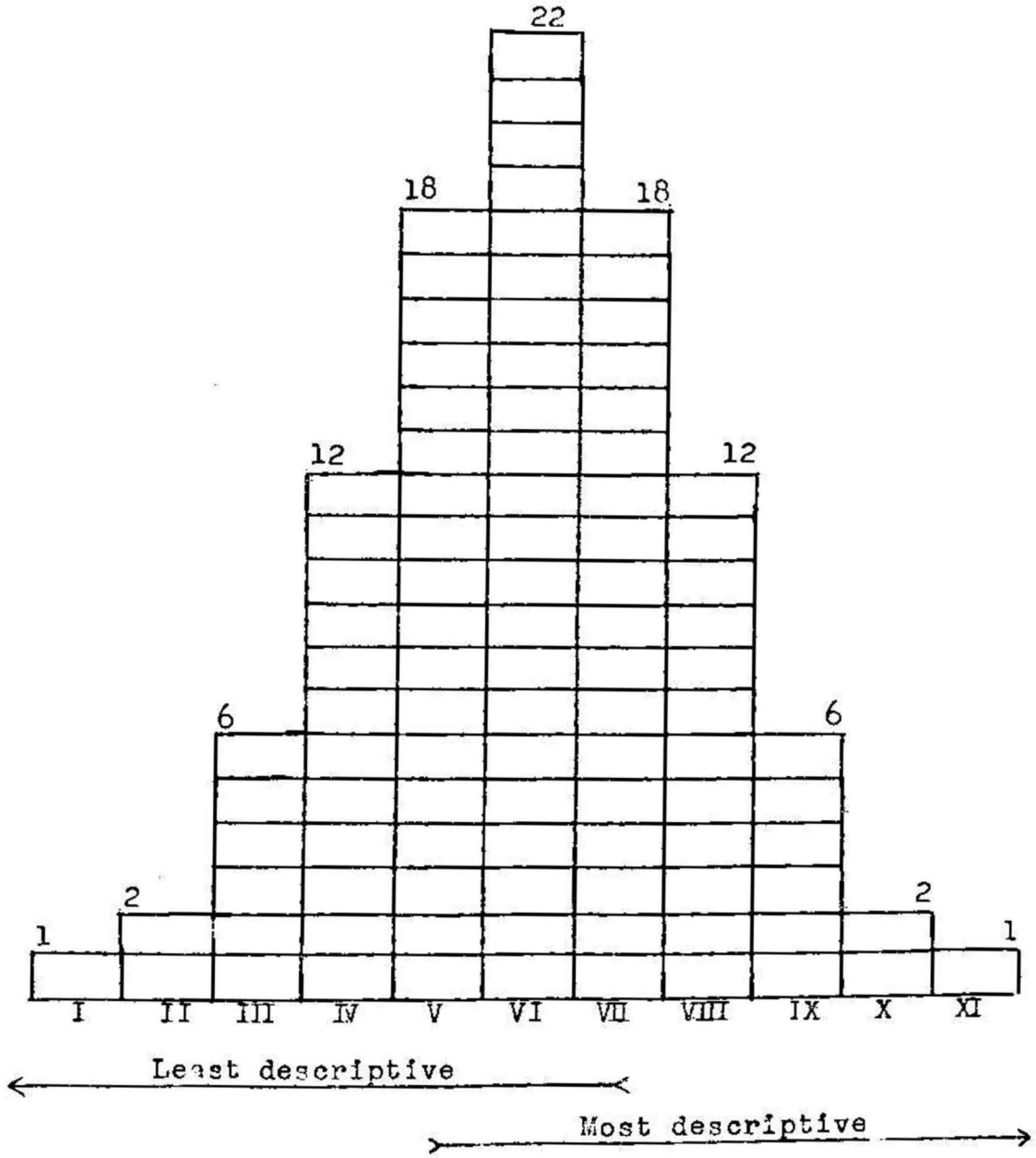

FIGURE 1

QUASI-NORMAL CURVE FOR RECORDING SELF-IDEAL SORTS

the box provided for it in column one. Continue the sorting for each column, always selecting the statement least like you. When you reach the center column, enter the numbers of the remaining statements in the scuares provided.

The total procedure was demonstrated before the class and individual help was given after the group instructions. However, no interpretation of the statements was given.

During the next class session the group was instructed to follow the procedure of the previous test, but to sort the items according to the way they would ideally like to be. The results of the first two sorts were designated self-concept I and ideal self-concept I. The last two class sessions were conducted in a manner similar to the first two sessions, and the tests were administered again. The results of the last two sorts were designated self-concept II and ideal self-concept II, respectively.

Student-centered procedure. The third class session marked the beginning of the student-centered process. Chairs were placed around tables arranged to form a large rectangle so that the individual student was able to converse easily with any other member of the group. The group leader seated himself and when class convened the students sat where they chose. Then the structure of the

course was presented indicating the point of view. The students were told that they were expected to read the text and that they could discuss any topic in class ranging from the text material to their own experiences. The instructor stated that he would not make any statement indicating a personal evaluation of individuals or their ideas, but that he would attempt to clarify and summarize statements and feelings of the group members.

The class members, at the beginning, asked the group leader questions pertaining to text materials and their own personal experiences on the job, in the home, in the service, et cetera. These questions were recognized and clarified. Several times the instructor felt the necessity to state the original structure of the course.

Gradually, as the school quarter progressed, the group began to find possible answers to their questions and work out possible solutions to their problems. In general, the students began to accept their own ideas and the ideas of the others as worthwhile contributions to the group effort, and they no longer required the instructor to give his approval or disapproval of their thoughts and actions.

CHAPTER IV

EXPERIMENTAL RESULTS

The first step in the treatment of test results was to determine the relationship of self-concept I to ideal self-concept I and of self-concept II to ideal self-concept II. The relationships were determined by the use of the Pearson r correlational method described by Lacey.[21]

The second step was to convert the correlation coefficients to z' scores using Edwards' table[22] of r values and the corresponding values of z'.

Edwards[23] suggested the third and fourth steps in the analysis of the data, that is, obtaining the standard error of the differences of the two z' arrays and computing the subsequent t value for the difference between means. It was then necessary to enter the table of t to determine the level of confidence.

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[21] Oliver L. Lacey, Statistical Methods in Experimentation (New York: The Macmillan Company, 1953), pp. 161-164.

[22] Allen L. Edwards, Experimental Design in Psychological Research (New York: Rinehart and Company, Inc., 1936) p. 409.

[23] Ibid., pp. 276-277.

Self-ideal relationship I. It can be observed from Table III that the first self-ideal correlations range from -.275, a considerable degree of discrepancy between self and ideal, to .85, a very marked degree of congruence. The mean z' of the distribution is .71 and the corresponding r is .61.

Self-ideal relationship II. The self-ideal relationship determined from the second testing may also be observed in Table III. The range is not quite so wide as in self-ideal I, from .16 to .85, from a small discrepancy to a substantial degree of congruence. The mean z' of the array is now .86 and the corresponding r is .70. The t value obtained is 2.33 and is significant at the 2 per cent level of confidence for seventeen degrees of freedom. There was then a greater degree of congruence between the perception of self and the perception of the ideal self. The greater degree of congruence seemed to substantiate the hypothesis of the study, i.e., that there would be a significant change in relationships between students' self-concepts and their ideal self-concepts.

It is interesting to note that these results are similar to the results that Bower measured in his experi-

TABLE III

CORRELATIONS AND CORRESPONDING z' SCORES FOR SELF-CONCEPTS AND IDEAL SELF-CONCEPTS

	Self I and Ideal self I		Self II and Ideal self II	
	r	z'	r	z'
a	.765	1.008	.845	1.238
b	.840	1.221	.830	1.204
c	.245	.250	.390	.418
d	.635	.750	.625	.733
e	.490	.536	.790	1.071
f	.590	.678	.755	.984
g	.355	.371	.160	.161
h	.655	.784	.745	.962
j	.520	.576	.635	.750
k	.865	1.313	.735	.940
l	.715	.897	.700	.867
m	.710	.887	.810	1.127
o	.685	.838	.810	1.127
p	.445	.478	.500	.549
s	.850	1.256	.805	1.113
t	.560	.633	.595	.685
u	.575	.655	.820	1.157
x	-.275	-.282	.390	.412
		12.849		15.498
		$\bar{z}'$ .714		$\bar{z}'$ .861

mental groups[24]. It is also interesting to note that these significant changes are similar to the changes that took place in Butler and Haigh's study of individuals in psychotherapy[25]. However, the changes during individual psychotherapy were statistically more significant than Bower's results and the results of the present study.

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[24] Bower and Tashnovian, op. cit., pp. 200-204.

[25] Butler and Haigh, op. cit., pp. 55-75.

CHAPTER V

I. SUMMARY AND CONCLUSIONS

In this study the author has reported his investigation of the hypothesis that student-centered teaching results in significant changes in the relationships between students' self-concepts and their ideal self-concepts in a class which was conducted in a student-centered manner.

Summary. A beginning course in psychology was conducted in a student-centered manner. The students were asked at the beginning of the course to evaluate themselves, using a set of self-referrent statements, first according to their concept of self and again according to their concept of the ideal self. The procedure was repeated during the last two class sessions. The relationships between the first two evaluations were compared with the relationships between the second two evaluations. The resultant statistic indicated a significantly higher relationship between the last two evaluations.

Conclusions. If the investigator follows the statistical inference regarding the null hypothesis, he must conclude that the statistical results of this study would not occur by chance more than two times in one hundred. He may not conclusively assume, however, that the results

were caused by a particular teaching method. The variables of age, time, practice-effect, sex, occupation, and socio-economic status, among other variables, may have contributed to the resultant change in the self-ideal relationship. Grummon[26] has stated that it is not practical to control all these and other variables because many of the variables are difficult to define in a precise and measurable way, and because the importance of these and other variables, in a study of changes in self-ideal relationships, can only be surmised. Butler and Haigh[27], attempting to control these variables, have shown that the passage of time alone is not a contributing factor in the changing of self-ideal relationships. Furthermore, Bower[28] has indicated that traditional classroom procedure does not bring about significant changes in the relationship between self and ideal-self. In addition, Roseborough[29] has stated that there is little doubt that individual performance is affected by group discussion processes. The investigator concludes, therefore,

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[26] Donald L. Grummon, "Design, Procedures, and Subjects for the First Block," Carl R. Rogers and Rosalind F. Dymond (Eds.), Psychotherapy and Personality Change (The University of Chicago Press, 1954), p. 44.

[27] Butler and Haigh, op. cit., p. 74.

[28] Bower and Tashnovian, op. cit., pp. 200-204.

[29] Roseborough, op. cit., p. 279.

that student-centered teaching resulted in a change in the self-ideal relationships of this experimental group as measured by this Q sort technique.

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APPENDIX

TABLE II

SELF-REFERRENT STATEMENTS

1. I feel uncomfortable while talking with someone.
2. I put on a false front.
3. I am a competitive person.
4. I make strong demands on myself.
5. I often kick myself for the things I do.
6. I often feel humiliated.
7. I am much like the opposite sex.
8. I have a warm emotional relationship with others.
9. I am an aloof reserved person.
10. I am responsible for my troubles.
11. I am a responsible person.
12. I have a feeling of hopelessness.
13. I live largely by other people's values and standards.
14. I can accept most social values and standards.
15. I have few values and standards of my own.
16. It's difficult to control my aggression.
17. Self-control is no problem to me.
18. I am often down in the dumps.
19. I am really self-centered.
20. I usually like people.
21. I express my emotions freely.
22. Usually in a mob of people I feel a little bit alone.
23. I want to give up trying to cope with the world.
24. I can live comfortably with the people around me.
25. My hardest battles are with myself.
26. I tend to be on guard with people who are somewhat more friendly than I expected.
27. I am optimistic.
28. I am just sort of stubborn.
29. I am critical of people.
30. I usually feel driven.
31. I am liked by most people who know me.
32. I have an underlying feeling that I am not contributing enough to life.
33. I feel helpless.
34. I can usually make up my mind and stick to it.
35. My decisions are not my own.
36. I often feel guilty.
37. I am a hostile person.
38. I am contented.
39. I am disorganized.
40. I feel apathetic.

TABLE II (continued)

41. I am poised.
42. I just have to drive myself to get things done.
43. I often feel resentful.
44. I am impulsive.
45. It's important for me to know how I seem to others.
46. I don't trust my emotions.
47. It's pretty tough to be me.
48. I am a rational person.
49. I have a feeling I'm just not facing things.
50. I am tolerant.
51. I try not to think about my problems.
52. I have an attractive personality.
53. I am shy.
54. I need somebody to push me through on things.
55. I feel inferior.
56. I am no one.
57. I am afraid of what other people think of me.
58. I am ambitious.
59. I despise myself.
60. I have initiative.
61. I shrink from facing a crisis or difficulty.
62. I just don't respect myself.
63. I am a dominant person.
64. I take a positive attitude toward myself.
65. I am assertive.
66. I am afraid of full-fledged disagreement with a person.
67. I can't seem to make up my mind one way or another.
68. I am confused.
69. I am satisfied with myself.
70. I am a failure.
71. I am likable.
72. My personality is attractive to the opposite sex.
73. I have a horror of failing in anything I want to accomplish.
74. I feel relaxed and nothing really bothers me.
75. I am a hard worker.
76. I feel emotionally mature.
77. I am afraid of sex.
78. I am naturally nervous.
79. I really am disturbed.
80. All you have to do is just insist with me and I give in.
81. I feel insecure within myself.
82. I have to protect myself with excuses, with rationalizing.
83. I am a submissive person.

TABLE II (continued)

84. I am intelligent.
85. I feel superior.
86. I feel hopeless.
87. I am self-reliant.
88. I often feel aggressive.
89. I am inhibited.
90. I am different from others.
91. I am unreliable.
92. I understand myself.
93. I am a good mixer.
94. I am adequate.
95. I am worthless.
96. I dislike my own sexuality.
97. I am not accomplishing.
98. I doubt my sexual powers.
99. I am sexually attractive.
100. I have a hard time controlling my sexual desires.