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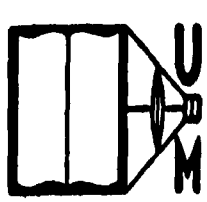

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THE EFFECT OF GROUP SELF-STUDY ON SOCIOMETRIC RATINGS

By

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A DISSERTATION

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THE PROBLEM

A. Introduction

One of the most potent attributes of the group is its ability to effect change. Moreover, the group offers an environment for experiences that are highly meaningful in working out personal and social adjustments. The child's status in the group directly influences what he receives from the group and what he contributes to it. His outlook is an entirely different one depending upon whether he is the recognized leader in the group, or if he feels deprived of the privilege of contributing what he might to the group, or if he feels himself on the periphery of the group with no associates. Security in the group is not gained by taking something away from the group, but rather by finding the proper relationship within the group.

B. Statement of the Problem

At no time is the social environment of the group more influential on the child, who, in turn, affects the environment of which he is a part, than at the junior high school level. It is then that independence from adults is being sought, and the approval of his peers is

becoming paramount. The social status of the child, reflected in a ceaseless and outwardly more or less imperceptible struggle for acceptance by the group, is of such momentous consequence at this age that most junior high school boys and girls admit a preference for being liked by their classmates over the possibility of being superior to them.

While the presence of some pupils in the junior high school classes is strikingly felt, and their influence often continues to grow from the first day, others come and go practically unnoticed and alone. Some pupils make their striving for group approval quite obvious, yet it appears that many of these pupils are no more accepted by the group than some who are openly shunned.

There is little time during the day for the classroom teacher to assist these children with their personal and social adjustments by individual counseling. The pupils come from various backgrounds to the junior high school, but information about their backgrounds is limited. The information the teacher has about their ambitions, interests, and satisfactions is also limited. The question arises as to what can be done with the entire group and within the existing conditions of the

classroom to effect a change toward improved social acceptance for the pupils.

Several years have been given to observing many different junior high school classes. Anecdotal records have been made of many of these classes. The organization and interpretation of these records indicate that inter-pupil relationships can be improved by seating pupils by their friends. Various sociometric practices have been tried. The earlier efforts in reseating for the benefit of the entire group show the inability of many children to go on from there. Some have been observed employing strange ways to maintain status.

This brought the realization that in some way these children must become acquainted with those personal and social traits that the group considered acceptable. These children should have the opportunity of practicing those elements of inter-personal relationships within the group which are known to improve social status. It was recognized that the child's personality and character development were so closely associated with his social status that his acceptability in the group could be considered a fairly accurate index of his adjustment in the group.

From these observations and considerations this problem evolved: <u>To what extent, if any, can the social</u>

status of the members of a class be changed by the group studying its own social needs?

Consideration of the problem suggests the following hypotheses to be tested. (At this point these statements are to be recognized as hypotheses which will be subjected to rigorous tests. Some of them may later be accepted on the basis of the evidence provided in the data; others may be rejected on the same basis.)

Hypothesis I. The social status of the members of a group can be measured in such a way that the sociometric scores of the entire group can be used in comparing this group with other groups.

Hypothesis II. The social status of the members of a group can be improved by the individuals themselves studying the needs of their group and making appropriate personal and social adjustments.

Hypothesis III. The social status of the members of a group will improve as the individuals learn to know a larger number of the other individuals in the group.

Hypothesis IV. More individuals will become known in those groups where the members of the group make a special effort to know each other.

Hypothesis V. Sociometrically, an individual's attitude toward the other members of his group is similar to the esteem in which he is held by the other members of the group.

Hypothesis VI. The acceptability status of an individual, as measured by sociometric ratings, is relatively stable.

C. Design of the Study

In order to test the hypotheses of this study two 7A vocal music classes were selected. This study was not made under the idealized conditions of some types of experimental research projects, but rather under the normal circumstances that prevail in a naturally occurring school situation. Every child enrolled in the two classes chosen for the experimental and control groups was included in the study.

The controlled variables held constant in both the experimental and control groups were age, occupation of parents which is related to the socio-economic level of the family, the elementary school last attended, the raw score on intelligence test, scholastic average, and music mark. Such factors as school, classroom, teacher, music instructional materials and facilities were identical. The variable factor was a group self-study project carried on by the experimental group.

It was necessary to know where the pupils started in relative social status and what point they had reached at the end of the study. The instrument of measurement

devised for this study was the sociometric test designed to show rejections, choices, unknown classmates and choice weighted attitude and acceptability scores. This sociometric test was chosen because of its special adaptability to the type of measurement required in this study:

(1) By means of this test every pupil was made aware of the names of his classmates.

(2) The real purpose of the measurement could be readily disguised and spontaneous choices could be expected.

(3) The data from the sociometric test gave a numerical score which represented the reaction of pupils toward their classmates.

(4) Patterns of inter-relationship of classmates could be investigated by studying the rejections, choices, and unknown classmates indicated by each pupil.

(5) The reseating of the classes on the basis of the test gave the pupils a satisfaction that was seemingly compensative for the effort required in taking the test.

(6) The choices were based on the dynamic personal reactions of a pupil toward his classmates and free from adult influence.

(7) Each pupil could set up his own line of demarcation for his own reasons, and his choices were made

in accordance with his reaction to the behavior of his classmates as he perceived them.

The sociometric tests were administered at the beginning, near the mid-point, and near the end of the semester. A fourth test, given the same week as the third sociometric test, was based on a new sociometric question concerning choices of those with whom the pupil wished to sing on the final examination in music. The sociometric ratings were used for reseating the experimental and control groups and not consulted at any other time until after the close of the semester in order to ensure that no attempt would be made to manipulate individuals or to counsel pupils directly on the basis of their sociometric ratings. Change of behavior was to be attempted through the utilization of the potentialities of a cohesive group, the forces of group discussion and group decision.

The experimental group was to be allowed not more than 30 minutes a week from the regular music class activities for a study of itself and its needs. The opinions were to be those of the group, not a reiteration of adult standards, and the group opinion, moreover, was expected to exert persuasive influence upon the behavior of the children. The study was to foster personal and social growth which was recognized to take place as any

other growth--a process in which essential meanings are clarified, deepened and broadened. The study was to be purposive from the pupil's point of view--a reshaping and reorienting of personalities in a better understanding and acceptance of themselves, gaining of insight into human relationships and adjusting to socially appropriate behavior. The acceptance and application of the principles taken up in the study was to be left to each individual to use as he saw fit, and each child was to feel free to participate in the discussions and activities proposed by the group to whatever extent he wished.

The topics to be discussed were to assume as logical a sequence as possible following the activities in the school for the semester. They were to be discussed in terms of "junior high people like yourselves" in an attempt to gain as objective and unprejudiced comments as possible. A consideration of the view-point of pupils new to the school was sometimes to be used as a focus for reference. No attacks or authoritative pressures were to be made on the pupils themselves, for certainly the learning to be undertaken here would be expected to cease at the moment when attack and authoritative pressure began.

The group as a whole--and the teacher was to be considered as a member of the group--was to come to an

understanding in general of the positive values which would lead to happiness, more friends, and better adjustment to the group. Specific references were to be made to the way the members of the group talked to each other, looked at each other, recognized each other's interests and possessions. The frustrations and prejudices common to all people were to be considered from the standpoint of how they can be recognized and controlled. Encouragement was to be given to dropping suspicion and caution and instead expecting friendliness, sympathetic listening, and support for one another. Consideration was to be given to the purpose of a group, what a group might be able to do that no one individual could do alone, and the satisfactions that could come from group participation.

The mere identification and discussion of the qualities pertaining to personal and social growth were recognized as only the first step in an attempt to foster a change of social status in the pupils. Next, those traits considered promising of more abundant living and by which the members of the group hoped to lift themselves into something of greater worth would not only have to be accepted but they would also have to be put into practice. The classroom was recognized as the first place where continuous opportunity could be

provided for this particular group to experience behavior relative to improving its own social interaction. However, the entire school, its corridors, and especially the more casual classes, such as those of the physical education department and the practical art courses, would all offer opportunities for these pupils to practice behavior associated with better inter-personal relationships of classmates. But the school, it was also recognized, could provide only a part of the opportunities that a child needs to develop to the fullest his personal and social capacities. He would find other opportunities in his home and in the community.

The data from each sociometric test was to be assembled on a matrix. This provided a means for studying both the pupil's reaction toward his classmates and their reaction toward him. The various reactions--rejections, choices, unknowns, and weighted choices--were to be totaled for each pupil and for the group as a whole.

Relationships existing between the sociometric scores of individuals and the group, and between the pre-test and final test were to be treated statistically. Percentages of pupils in each group making specific responses were to be determined, means and standard deviations of reactions were to be computed. Correlations according to the Pearson product-moment were to be

made of the reactions of the pupils in the two groups. To test for differences between sociometric scores of the experimental and control groups on the pre-test and final test, and to know which of the reactions on the sociometric test were to be considered significant, the covariance method was to be employed. Other correlations between the controlled variables and the acceptability scores of the experimental and control groups were to be computed.

D. Organization of the Remainder of the Dissertation

To establish a frame of reference for this study a review of pertinent and significant studies in the fields of sociometry and child social growth and development has been presented. This is followed by a description of the groups in which the relationship of the controlled and variable factors has been considered. The instruments used in this study have been described, followed by an account of the organization and plan of materials for the group self-study. Next, the procedures used in administering the sociometric tests and in presenting the group self-study lessons have been described. A chapter has been devoted to an interpretation of the findings resulting from the sociometric data and the group self-study. Finally, the conclusions have been

presented with reference to the stated hypotheses and a summary has been made of the findings.

CHAPTER II

REVIEW OF LITERATURE

A. Introduction

This chapter will cite pertinent studies that have been made by others in the fields of sociometric testing and pre-adolescent and early adolescent personal and social development. A review of these will serve as an orientation to the project under consideration, and it will also show the consistency of certain results.

B. Literature on Sociometric Testing

To adequately explain group behavior, such as that undertaken in this study, the entire structure of the social situation and the potentialities of relating forces must be considered. Lewin[1] and Lippitt,[2] the social psychologists, have shown that the interdependence of the physiological, psychological, and sociological factors in group relationships indicate that the social

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[1] Kurt Lewin, "Field Theory and Experiment in Social Psychology," American Journal of Sociology, 44:868-896, May, 1939.

[2] Ronald Lippitt, "Field Theory and Experiment in Social Psychology," American Journal of Sociology, 45: 26-49, July, 1939.

position of the individuals composing a group must necessarily be conceived of within the dynamic group situation of which the individual is a part. Considering the individual in relationship to the entire group of which he is a member and the total group as a developing organic unit is also recognized by the sociometrists, Bronfenbrenner,[3] and Moreno and Jennings.[4]

The Sociometric Test. An ingenious instrument for measuring interrelationships found among group members and within the limits of its own social frame is the sociometric test. The sociometric test, as we know it in this country, was developed by J. L. Moreno and introduced through his book, Who Shall Survive?[5] published in 1934. In his book Moreno[6] reports that he has studied group formations in three ways. (1) He has made observations and rough classifications of how groups are

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[3] Urie Bronfenbrenner, "Social Status, Structure, and Development in Classroom Groups," Unpublished Doctor's dissertation, The University of Michigan, Ann Arbor, Michigan, 1944, 256 pp.

[4] Jacob L. Moreno and Helen H. Jennings, "Statistics of Social Configuration," Sociometry, 1:342-374, January, 1938.

[5] Jacob L. Moreno, Who Shall Survive? A New Approach to the Problem of Human Relations, Washington, D. C.: Nervous and Mental Diseases Publishing Company, 1934, 440 pp.

[6] Ibid., p. 12.

formed and where the pairs and the isolates exist. (2) He has become a part of the group and experienced the polarity of the relationships. (3) He has asked members of groups to report their conclusions, such as parents, teachers and foremen, who, he says, have very inaccurate insight into the inner-workings of the group. The most accurate way to measure this aspect of the group, Moreno[7] is convinced, is to offer the individual the opportunity "to become an active agent in matters concerning his life situation" by asking him to choose his associates.

Jennings, who worked with Moreno on sociometric studies, states, "Each individual displays selective affinity between himself and persons around him. He may approach those who respond to him or whom he wishes to respond to him; he may keep away from those whom he feels he cannot interest or who repel him."[8] The making of choices in itself is an index to social growth. Jennings writes in another publication that social growth is determined by one's capacity to "relate one's self selectively to persons who in turn respond in particular situations."[9]

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[7] Ibid., p. 15.

[8] Helen H. Jennings, Leadership and Isolation, New York: Longmans, Green and Company, 1943, pp. 6f.

[9] Helen H. Jennings, "Sociometry in Action," Survey Midmonthly, 84:42, February, 1948.

In behalf of the sociometric technique she writes, "The sociometric test allows the individual to become an agent in his own behalf, to give his personal feelings for others in the form of choices for functioning with them within the group of which he and they are members. In this regard, he acts in order to remake the collective of which he is a part."[10] At another time Jennings stated, "From its original conception by Moreno, the sociometric test . . . has proved well fitted to fulfill the task set for it. It has penetrated beneath the overt manifestations of group life to the invisible network of interrelations on which they are built."[11]

A teacher is aware that within her classroom there are small groups or cliques. She also recognizes that some boys and girls are left out of those groups for which they obviously are striving. A few of these boys and girls, she will find, are taken into a next-best group, but still others are left outside of all groups. But Moreno,[12] among others, has shown that teachers

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[10] Jennings, Leadership and Isolation, op. cit., p. 10.

[11] Helen H. Jennings, "A Sociometric Study of Emotional and Social Expansiveness," Child Behavior and Development, Roger G. Barker, et al., editors; New York: McGraw-Hill Book Company, 1943, p. 528.

[12] Jacob L. Moreno, "Sociometry in the Classroom," Sociometry, 6:425-428, November, 1943.

cannot trust their observation and judgment for all the facts concerning who belongs to what group and who is left out. In a study of 111 twelve- to sixteen-year old boys at a two-month summer camp, Dimock[13] found a correlation of .57 between the group counselor's rating of the boy's social acceptability and his actual acceptability. A boy was either better or more poorly adjusted in his group relations than his adult counselor, trained and experienced in observing behavior, who lived with him, was able to observe in 10 per cent of the cases. In most of these cases of discrepancy, however, the counselor over-rated the boy's actual acceptability in his group. Dimock attributes this to the zealousness on the part of the counselor to have the boys get along well with each other.

At the time that children become more influenced by other children and less by adults, a growing inaccuracy on the part of teachers in recognizing the position of the most and least desired students in her classes becomes apparent.[14] Bonney's study[15] of teacher judgment

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[13] Hedley S. Dimock, Rediscovering the Adolescent, New York: Association Press, 1937, pp. 131 f.

[14] Moreno, Who Shall Survive? op. cit., p. 54.

[15] Merl E. Bonney, "Sociometric Study of Agreement Between Teacher Judgments and Student Choices," Sociometry, 10:133-146, May, 1947.

revealed the characteristics of individuals who were most likely to be over-rated and those who were most likely to be under-rated.

Much can be learned from direct observation about the child's friendships by observing who talk together, who wait to walk home together after school, and by noticing the remarks the children make about each other, but there is evidence[16] that factors beyond an individual's control affect his behavior to such an extent that mere observation of his behavior is not always a reliable index to the associates he would prefer. "There are walls around a youngster's world," writes Tuddenham, "that make it extremely difficult for grown-ups to see children as other children see them. As teachers, we are inclined to appraise boys and girls in the light of their relationship to adults. This is hardly ever the criterion used by the children themselves."[17] Regardless of how little notice individuals seem to give to the others in the group, it is doubtful that two children can look at each other without an emotional reaction of some sort having taken place.

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[16] Jennings, "Sociometry in Action," op. cit., p. 44.

[17] Read D. Tuddenham, "Belonging in the Group," Educational Leadership, 1:201, January, 1944.

Although there are other "sociometric scales," many of which are described by Chapin[18] and Lundberg,[19] the sociometric test employed in determining social status has up to the present time possessed, according to Jennings, three main characteristics:

> 1. A specific number of choices is allowed, varying according to the size of the groups tested;
>
> 2. A specific criterion for choice is used, varying with the functional activity of the group . . . ;
>
> 3. Different levels of preference are designated for each choice (first, second, etc.)[20]

Administering the Sociometric Test. The sociometric test used in this study was developed after examining the techniques used in many earlier studies. Besides covering the three points above, the instructions accompanying the sociometric test should be stated simply. Elliott[21] found that elementary school children accepted

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[18] F. Stuart Chapin, Experimental Designs in Sociological Research, New York: Harper and Brothers, 1947, 206 pp.

[19] George Lunberg, Social Research: A Study in Methods of Gathering Data, New York: Longmans, Green and Company, 1942, 462 pp.

[20] Jennings, Leadership and Isolation, op. cit., p. 18.

[21] Merle H. Elliott, "Patterns of Friendship in the Classroom," Progressive Education, 18:384, November, 1941.

the sociometric test as a game. Junior and senior high school students, he believed, require more explanation concerning the significance of the test for them.

The individuals of the group to whom the sociometric test is administered are asked to make known their choice of individuals, usually in writing, in response to a definite question. Jennings[22] stresses the importance of the group understanding that the choices are a part of a real situation based on the rearrangement of the group. The children should be informed about when their choices will be put into effect and how long it will be before another opportunity to choose will be given.[23]

In some sociometric studies it is helpful for the teacher to know those who are rejected as well as those who are chosen. This should be handled, according to Jennings,[24] in a direct manner with no implication of individuals judging each other.

The way in which the question preceding the sociometric test is stated is directly related to validity of

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[22] Jennings, "Sociometry in Action," op. cit., p. 41f.

[23] Loc. cit.

[24] Loc. cit.

the data resulting from the test, for each question asked will bring forth a slightly different pattern of choices from the same group. The question should be stated precisely and yet casually with consideration for the class rapport which is an important factor determining the validity of the sociometric test. The motivation in the introductory remarks must be sufficient to arouse the interest and enthusiasm of the students for this activity. Jennings[25] urges that direct use of the term "sociometric test" be avoided, for to too many boys and girls the word test means either a right or a wrong answer.

The accuracy and value of the sociometric test depends on the spontaneity with which the responses are given. Until recently, measures used to identify social structure did not recognize spontaneity, a factor which possesses important implications in situations involving human relations. According to Moreno,[26] spontaneity is the way in which human beings respond to situations; those who select the appropriate action in each instance

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[25] Helen H. Jennings, Sociometry in Group Relations, Washington, D. C.: American Council on Education, 1948, p. 16.

[26] Jacob L. Moreno, "The Sociometric View of the Community," Journal of Educational Sociology, 19:543, April, 1946.

will survive. This, indeed, then, is the answer to the title of Moreno's book, Who Shall Survive? In the classroom situation we have Jennings' word that there is "actually little risk that arrangements based on spontaneous choice will turn out to be unsound either educationally or psychologically. This is often the case even when children's wishes seem to run counter to the teacher's judgment. The latter may be unduly influenced by considerations of academic ability or standard behavior."[27]

Carrying Out the Agreement of the Sociometric Test. In carrying out the agreement relative to the choices made by the group, Jennings[28] states, two principles are to be followed to allow for optimal satisfaction: (1) provide each individual with some of his choices, and (2) recognize the highest reciprocal choice offered between individuals. In the case of an unchosen individual, his first choice should be recognized whenever possible. One who has his second choice but not his first reciprocated, should be given his second choice. When an individual receives rejections, he should be placed where he is least likely to experience open rejection

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[27] Jennings, Sociometry in Group Relations, op. cit., p. 66.

[28] Jennings, Sociometry in Action, op. cit., p. 41.

and away from those who indicated their rejection. The intent is to provide each individual with companionship wherein he will find mutual response.

If boys and girls are placed randomly about the classroom in respect to the choices they have given, the next time they have an opportunity to make choices they will show more boys choosing girls and girls choosing boys. "When the classroom," according to an observation by Jennings, "is given the appearance of a monastery and a convent side by side, the next sociogram is almost certain to show the same or more extreme intersex cleavage. (It becomes 'not the thing to do' to choose the other sex.)"[29]

Sociometric Choices. The number of choices do not noticeably change the organization of the group, according to a study by Newstetter, Feldstein, and Newcomb,[30] who found that the organization revealed by five-choices and seven-choices did not differ significantly.

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[29] Ibid., p. 44.

[30] Wilber I. Newstetter, Marc J. Feldstein, and Theodore M. Newcomb, Group Adjustment: A Study in Experimental Sociology, Cleveland, Ohio: School of Applied Social Service, Western Reserve University, 1938, p. 45.

A sociometric study by Moreno, Jennings, and Sargent which asked the question concerning how much time an individual would be willing to spend with others disclosed a general tendency for those having a higher sociometric status to choose a smaller number of persons with whom to associate. Conversely, the lower an individual's sociometric status, the more the likelihood that this person would choose many others. They comment,

> It is as if a person of a lower sociometric status were feeling his way into some permanent relationship, and meeting with no response . . . and a person of a higher status exhibits, whether through wisdom or a natural affinity, a fine sense of discrimination in choosing relatively few others on the high sociometric status level.[31]

According to Jennings'[32] results, an individual has a relatively constant degree of emotional range towards others, and this emotional range appears stable, regardless of the positive or negative reaction toward him by others. Newstetter, Feldstein, and Newcomb[33] also found this to be true in their study of boys attending a five-week summer camp.

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[31] Jacob L. Moreno, Helen H. Jennings, and Joseph H. Sargent, Time as a Measure of Inter-Personal Relations, Sociometric Monographs, No. 13; New York: Beacon House, 1947, p. 15.

[32] Jennings, Leadership and Isolation, op. cit., p. 210.

[33] Newstetter, Feldstein, and Newcomb, op. cit., pp. 66f.

Moreno writes, ". . . If the expansion power of our emotional life should be so incredibly large as to enable us to produce and sustain billions of friendships or hostilities, our social universe would burst from the unendurable heat of too much affection and passion."[34] Moreno believes, however, that emotional expansiveness can be influenced by training. He continues, ". . . Of course, no individual can be thrown beyond what appears to be his organic limit. But in most cases we have studied, this limitation has been due to a functional inability to make full use of its full range within the organic limit."[35]

Interpreting the Data. In regard to the mechanics of representing the interpersonal relationship of individuals, Jennings[36] suggests that the data first be set up in matrix form and the written statements of the children's choices destroyed. She then would arrange the material in a sociogram which reveals the inner structure of the group.[37]

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[34] Moreno, Who Shall Survive? op. cit., p. 134.

[35] Ibid., p. 135.

[36] Jennings, Sociometry in Group Relations, op. cit., p. 17.

[37] Ibid., p. 31.

Northway,[38] who considered the sociogram cumbersome, developed a method of weighting the first, second, and third choices and writing the names of the children of the quarter of the group receiving the lowest choices on the outer ring of a target diagram. As the score received by the other children increased, the name was placed nearer the middle of the target. Arrows drawn from each individual to the person he chose indicated the direction of the choice. Cook[39] followed a stratification of the sociogram technique in an attempt to secure a quantitative measure. A device for presenting sociometric data in matrix form was introduced by Forsyth and Katz[40] in attempting to handle more effectively data collected by the Detroit Citizenship Education Study Staff. By re-arranging the rows and columns the group structure of cliques, pairs, stars, isolates, chains, and conflicts between sub-groups were made apparent.

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[38] Mary L. Northway, "A Method of Depicting Social Relationships Obtained by Sociometric Testing," Sociometry, 3:144-150, April, 1940.

[39] Lloyd Allen Cook, "An Experimental Sociographic Study of a Stratified Tenth Grade Class," American Sociological Review, 10:250-261, April, 1945.

[40] Elaine Forsyth and Leo Katz, "A Matrix Approach to the Analysis of Sociometric Data," Sociometry, 9:340-347, November, 1946.

Validity and Reliability of the Sociometric Test. Jennings explains that concepts of validity and reliability do not have the same application in sociometric testing as in the field of intelligence testing.

> The test here is not intended as an indirect measure of other behavior. It is a sample of the actual behavior studied and as such is in itself directly meaningful and need not be validated by relating it to an external criterion. It also need not be consistent from one application to another, since it is not required to be related to a supposedly unchanging criterion (e.g., as intelligence is supposedly related to an unchanging criterion in the nervous system). The present research, however, reveals the individual's behavior in choice to show considerable stability.[41]

Pepinsky would agree with the foregoing statement of Jennings but adds that "in order to meet the remaining questions of whether subjects' stated choices may be accepted as 'valid' in the sense that they are subjectively honest, this testing situation, like those in psychometric testing, should be set up in such ways as to maximize the rapport with the experimenter and the motivation for the subjects."[42] This, of course, depends upon how meaningful the matter of making choices is to

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[41] Jennings, "A Sociometric Study of Emotional and Social Expansiveness," op. cit., p. 533.

[42] Pauline Nichols Pepinsky, "The Meaning of 'Validity' and 'Reliability' as Applied to Sociometric Tests," Educational and Psychological Measurement, 9:39-49, Spring, 1949.

the subject; and the assurance he feels that his choices will mean a change in the group structure. On the validity of sociometric techniques this is offered:

> The responses of individuals in the group are only as valid as is made possible by the degree of morale of the group and the degree of rapport of the teacher with the group. If there is resistance to making responses, or to signing names to responses, it is unlikely that the results will be valid, and thus the sociogram is not worth the paper on which it is made . . .[43]

Harmon, adding one aspect to Pepinsky's paper, states that in sociometry "the data are almost always directly descriptive of the universe itself. Hence the only possibility of error that could invoke the concept of reliability would be clerical or mechanical errors in handling the data, rather than errors of random sampling."[44]

Pepinsky concludes:

> The concepts of "reliability" and "validity" as traditionally used--and misused--by psychologists, seem to have little direct meaning or application to the field of sociometry. The systematic development of new concepts, in a new frame of reference, is indicated, a development in which statistical method is matched by rigorous theoretical definition.[45]

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[43] Horace Mann-Lincoln Institute of School Experimentation, How to Construct a Sociogram, New York: Bureau of Publication, Teachers College, Columbia University, 1948, p. 11.

[44] Lindsey R. Harmon, "A Note on Pepinsky's Analysis of 'Validity' and 'Reliability' of Sociometric Data," Educational and Psychological Measurement, 9:747, Winter, 1949.

[45] Pauline Nichols Pepinsky, op. cit., p. 48.

Sociometric Patterns. Regardless of the form in which data from the sociometric test is presented--sociogram, target, matrix, or whatever--each classroom will show its own cliques or sub-groups; its "stars," individuals who are chosen too often; its ignored, overlooked or neglected individuals; its rejected; and its isolates. Most classrooms will show mutually accepted or rejected pairs and triangles, a few will reveal squares and circles. "The most frequently encountered pattern within the over-all network," Jennings contributes, "is a sort of string or chain of one-way choices . . . In the primary grades such chains occur very often and are sometimes quite long. Usually there are few mutual choices in the sociogram until the third grade."[46] She believes that the reason a class acts in some cases as if with one accord can be attributed to this network reacting in a situation stimulated by key individuals in the chain.

The boys and girls who are unable to win real belonging, in any one group hovering at the edge of first one sub-group and then another have been called "fringers."[47]

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[46] Jennings, Sociometry in Group Relations, op. cit., p. 24.

[47] American Council on Education, Helping Teachers Understand Children, Washington, D. C.: American Council on Teacher Education, 1945, p. 277.

Mutual choice pairs, a reciprocated choice, according to the study by Moreno[48] of 2,000 children in Public School 181, Brooklyn, New York, reached a peak in the seventh grade. At the kindergarten level 6.5% of the children selected mutual choice pairs. This rate was gradually increased until it reached 21.0% in the seventh grade. The mutual choice pairs dropped back to 16.5% in the eighth grade. This study also revealed that the mutual pairs in the seventh grade were, for the most part, between boy with boy and girl with girl.[49]

When a sociometric study shows that the classroom possesses an unusually large number of both stars and isolates, the presence of disintegration is accepted. On the other hand, the sociometric study of a classroom showing many reciprocated or mutual choices indicates, according to Olson[50] the presence of good social feeling.

Status of the Popularly Chosen Individual. The data from the sociometric tests are an aid to identifying the most popular children of the group. It will be

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[48] Moreno, Who Shall Survive? op. cit., p. 265.

[49] Ibid., p. 55.

[50] Willard C. Olson, "The Improvement of Human Relations in the Classroom," Childhood Education, 22: 319, March, 1946.

recalled, however, that this popularity is in response to a specific question. A different question may show another individual receiving more of the choices. The newcomer to a group, Jennings[51] says, will add his choice to the "over-chosen leader-individual." Zeleny, compiling the reports of many investigators, concluded, "Leadership status, once attained, tends to remain relatively constant in an unchanging group structure; but as the social pattern of the group changes the leadership tends to change."[52]

Although some users of the sociometric techniques in identifying the child receiving the most choices have interchanged the terms "star," "over-chosen," "popular," and "leader," a distinction should be made between leader and the other terms given. "Popular people are not necessarily leaders," Cunningham[53] points out. Unless wisely guided, boys and girls "tend to make little distinction between the role of hero and leader." She continues,

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[51] Helen H. Jennings, "Leadership and Sociometric Choice," Sociometry, 10:47, February, 1947.

[52] Leslie Day Zeleny, "Leadership," Encyclopedia of Educational Research, Walter S. Munroe, editor; New York: Macmillan Company, 1950, p. 665.

[53] Ruth Cunningham, et al., "Leadership and the Group," NEA Journal, 37:502, November, 1948.

> A fallacy in many of our sociometric technics based on statements of friendship is that popularity and leadership are confused. The most chosen person is not necessarily the one who can move the group to action. And even if he may be able to in one situation, he may not in another. Research indicates that as groups grow in efficiency and group maturity, they increase in ability to distinguish between popularity and leadership.[54]

Sociometry is particularly valuable in the opinion of one school administrator[55] in identifying the "operational" leader of the group as opposed to the "official" leader.

Status of the Less Chosen Individual. Bronfenbrenner concluded from his study made with the University of Michigan elementary school that in classroom groups "the proportion of overlooked or rejected children is greater than the proportion of children who are exceptionally popular and acceptable."[56] Flotow found in his study of the children of the fourth through eighth grades of the New Lenox, Illinois, schools that "the isolates and the neglectees outnumbered the stars by

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[54] Ibid., p. 503.

[55] Dan H. Cooper, "The Potentialities of Sociometry for School Administration," Sociometry, 10:114, May, 1947.

[56] Urie Bronfenbrenner, The Measurement of Sociometric Status Structure and Development, Sociometry Monographs, No. 6, New York: Beacon House, 1945, p. 47.

more than two to one."[57] In accord with this is Moreno's[58] study of four fifth grade classes in Public School 181, Brooklyn. He reports that approximately 30 per cent of the pupils were undesired by their own classmates at the same time that approximately 10 per cent of the pupils were over-desired.

In describing the least popular children Jennings writes,

> . . . Isolates and the near-isolates appear relatively "self-bound," behaving in ways which tend to show little capacity to identify with others or to bridge the gap between their own personalities and others as members of the sociogroup.[59]

Many boys in the Dimock study were described as being found

> . . . in virtual social isolation, impoverished in personality, in the midst of an abundance of potential friends. Their deep longing for the comradeship of understanding friends denied, they feel the dejection and loneliness of those who are in the social group but not of it. Others, how many we cannot accurately tell, feel the sting of being ridiculed, unwanted, and unliked by those for whose opinion and approval and friendship they care the most. With shriveled ego and punctured sense of self-esteem they seek by devious ways to

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[57] Ernest A. Flotow, "Charting Social Relationships of School Children," Elementary School Journal, 46:498, May, 1946.

[58] Moreno, "Sociometry in the Classroom," op. cit., p. 425.

[59] Jennings, "Leadership and Sociometric Choice," op. cit., p. 43.

> convince themselves that they possess a worth and a social status that their world of associates, cruelly and unremittingly daily denies.[60]

Jennings believes, "Under present conditions the individuals found to suffer most consistently in school are children of minority status. . . . Then fear and a sense of futility may easily become chronic states of mind for such youngsters and may undercut their hopes and self-confidence from the beginning."[61]

Northway worked with "outsiders" in a two-year study of fifth and sixth graders of a school in a middle class suburb of Toronto. These were the children in the lowest quartile of acceptability. Although there was a great range of behavior, Northway[62] found she could make three main classifications of these least accepted children: (1) the recessives who were listless, lacking vitality, usually below par physically and in the effective use of their ability; (2) the socially uninterested who had developed personal interests in various directions, such as art, music, hobbies, reading, home affairs and were quiet with other children or actually

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[60] Dimock, op. cit., p. 125.

[61] Jennings, Sociometry in Group Relations, op. cit., p. 10.

[62] Mary L. Northway, "Outsiders," Sociometry, 7:12-13, February, 1944.

uninterested; and (3) the socially ineffective children who were keenly interested in social affairs but failing to establish good social relationships compensated for their insecurity in noisy, rebellious, and arrogant behavior. Northway believes that most schools are not staffed to adequately handle the serious recessive cases where pre-psychotic conditions exist, but the schools can locate these cases. The socially uninterested children can have their interests redirected. She stresses that they be guided to participate inconspicuously with the group. She advises against having this type of child perform for the group. "To have the musical child play for the whole school--is unwise. If he succeeds he becomes established in the role of a musician, 'the guy who's always playing the violin' rather than a person."[63] The socially ineffective child through confidence in the teacher and participation in active sports and games with the other children can be guided into the establishment of good social relationships and the acceptance of social responsibility.

Northway's closing statements in this study are:

> The outsiders are dangerous to themselves in terms of their future development as potential psychotics or misfits, and to society in terms of their

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[63] Ibid., p. 15.

> drive for social domination to compensate for their lack of social assimilation. Diagnosis through use of sociometric testing at the school level is useful, but guidance cannot be carried out solely by trained clinicians but must come through the efforts of enlightened parents and teachers who have normal contacts with the child in his everyday world. Because, however, at the upper public school levels personality patterns are already fairly stabilized, it is important that increased attention be given the emergence of these characteristics in the preschool child and that effective means of guiding his social development at that level be ascertained.[64]

As opposed to Northway's suggestion that the musician not be allowed to play before the school, Atkin and Riggs[65] in their work with a 7A social studies class report satisfactory results gained with the isolated boy who played the violin before his class. These authors found that "attention given to isolated children through the use of an enriched program with particular care given to drawing these children into the group, results in greater group cohesiveness through established inter-relationships . . ."[66]

Another comment is taken from Northway concerning the optimum number of choices.

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[64] Ibid., p. 17.

[65] Ellen M. Atkin and Laurence A. Riggs, "Sociometric Experiment with Isolated Children in a 7A Junior High Group," Baltimore Bulletin of Education, 22:97, September, 1945.

[66] Ibid., p. 99.

> In using the social acceptability scale we have frequently found the assumption being made by teachers and others, that the attainment of a high social acceptability score was considered the desirable position for a child to hold. From our observation of children the assumption that increased social acceptability and optimal personality development are directly related seems unwarranted. It is true that those children with zero or very low scores present problems, but beyond that we have no evidence for believing high acceptance is better than acceptance by a few friends and acquaintances. As long as our society is such that it requires its artists, its thinkers, its quietly effective people as well as its leaders, its salesmen, its flamboyant figures, it would seem necessary we help the child form the kind of adjustment which is most adequate for him. The youngster with his few loyal friends, a socialized point of view, and ability to play his part in a group may be as adequate and happy a person as the very highly acceptable child who is the center of the group . . . With children perhaps the most unfortunate thing we do is to insist that to be successful they must drive towards winning friends and influencing people. The teacher who can use the qualities of the reserved artistic child, the quietly effective thinker, for the increased benefit of the group as a whole is thereby establishing a truly democratic society within which each person contributes according to his unique qualities and profits in terms of his unique experience.[67]

Flotow[68] writes in relation to this topic that not every child needs fifteen or more choices to be socially happy in school and that not every child having fifteen or more choices is socially well adjusted.

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[67] Northway, "Outsiders," op. cit., p. 17.

[68] Flotow, op. cit., p. 504.

Changing Social Status. How to set about improving the social acceptance of children in a classroom is outlined by McClelland and Ratliff. They suggest as a first step giving a sociometric test; next, analyzing the individual's social status and the group's social composition; measuring the individual's personality, carrying out planned group activities to achieve more socially accepted ends; and again giving a sociometric test "to determine the extent to which socialization has been promoted as measured by the greater distribution of social acceptance throughout the entire group."[69] Although there is reason to consider the procedure followed by Elliott in his study of children in the Oakland, California, public schools as superficial and not touching "the deeper sources of maladjustment," he offers three techniques which, he says, classroom teachers have found successful: "(1) providing opportunity for the development of friendly relations; (2) improving social skills; (3) building up a sense of accomplishment or competency."[70]

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[69] F. M. McClelland and John A. Ratliff, "The Use of Sociometry as an Aid in Promoting Social Adjustment in a Ninth Grade Home-Room," Sociometry, 10:147-153, May, 1947.

[70] Elliott, op. cit., p. 388.

Kuhlen and Bretsch[71] agree with Elliott in the desirability of teaching the "social graces" to the least accepted, but they also recognize the obstacle some homes are to any progress the school might be able to effect. Improved social relationships, according to Flotow, can be achieved through "(a) greater emphasis on group work, (b) greater effort at developing individual abilities and talents, (c) giving more time to expression of abilities, (d) development of character, and (e) development of habits of cleanliness, etc."[72] This experimenter has also suggested more specific means of attaining desirable social status, such as learning to throw a ball, to dress appropriately, and to dance, but his recognition of the basic aspects of social adjustment might be questioned.

The conventional classroom, Pressey and Hanna[73] report, does not offer the students an opportunity to become acquainted with the other students of the class. The university class described was managed from a

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[71] Raymond G. Kuhlen and Howard S. Bretsch, "Sociometric Status and Personal Problems of Adolescents," Sociometry, 10:130, May, 1947.

[72] Flotow, op. cit., p. 504.

[73] Sidney L. Pressey, and David C. Hanna, "The Class as a Psycho-Sociological Unit," Journal of Psychology, 16:19, 1943.

psycho-sociological basis and attempts were made to develop each student to his fullest social personality. Dimock writes in this regard,

> The casual and short-lived contacts of an individual with a number of other individuals undoubtedly possess some educational possibilities. But the individual is strongly influenced by regular, frequent, and continuous experiences in a group that has unity, morale, extensive inter-weaving of friendships, and the other psychological qualities of cohesiveness. This kind of group experience does affect the personality status, the moral ideas, the specific behavior, the unity of ideals and conduct, and the integration or consistency of conduct of its members. If these social forces are capitalized, they may become the allies of education and be directed toward the achievement of desirable outcomes in the development of persons. To ignore them in the educational task, if personality and character results are counted important, is to work against tremendous odds.[74]

In her studies of regrouping Jennings makes a statement similar to this last one, "Allow children to grow with rather than against each other."[75] In another passage she[76] points out how some teachers overlook the fact that some boys and girls are able and willing to explain things to each other and sometimes with an understanding that facilitates learning. She believes that

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[74] Dimock, op. cit., p. 202.

[75] Helen H. Jennings, "Using Children's Social Relations for Learning," Journal of Educational Sociology, 21:552, May, 1948.

[76] Jennings, Sociometry in Group Relations, op. cit., p. 6.

children resort to subterfuge when they are not permitted to help each other. It is important, she believes, that teachers recognize children's friendships, not seating them apart intentionally, but working with respect to the child's feelings and ideals rather than against them.

In light of the statement above it is not surprising that the third grade class reported by Olson showed, "Disappointing results in terms of change on a sociometric test" given six months later.[77] Olson describes the situation:

> The teacher attempted to keep the isolated children near at hand for purposes of easy control. A subsequent time sampling study of teacher control of behavior demonstrated that the children who had received few choices received a disproportionate amount of control in order to maintain some social unity and to prevent them from leaving the group.[78]

The first and second sociometric tests did not show the expected relatively high correlation of consistent group status in Barker's[79] study. He found that interpersonal relationship arise very rapidly. In this group merely from observing each other and before verbal contact was made there were stars, isolates, reciprocates,

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[77] Olson, op. cit., p. 321.

[78] Loc. cit.

[79] Roger G. Barker, "The Social Inter-relations of Strangers and Acquaintances," Sociometry, 5:179, May, 1942.

and non-reciprocates reported. After the individuals had become acquainted with other aspects of the personalities in the group, the second sociometric test showed little correlation with the data from the first test in regard to the same individual and the group as a whole.

From his study of socially successful and unsuccessful children Bonney concluded:

> A child is well accepted in a group much more because of what he is and what he does which wins the admiration of others than because of what he refrains from doing, or in other words, --strong, positive personality traits are more important than negative virtues. From this statement it follows that any type of moral or religious education which places great emphasis upon docility, nicety, and submission to authority may be a hardship to a child's social acceptance.[80]

Social action need not be based on the "clearly conscious level. Stimuli which do not enter consciousness at all may modify social behavior." One authority writes,

> Our intuitive evolution of the social situation, our "instinctive" hesitancy to join in a game, our "instinctive" trust in a man with a bold proposal, is based in large measure upon subliminal conditioning. We learn day by day the meaning of gestures, facial expression, tone of voice; but a great deal that we learn functions beneath the level of consciousness . . .[81]

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[80] Bonney, "Personality Traits of Socially Successful and Unsuccessful Children," op. cit., p. 471.

[81] Gardner Murphy, Lois Barclay Murphy, and Theodore M. Newcomb, Experimental Social Psychology, revised edition; New York: Harper and Brothers, 1937, p. 163.

Moreno and Jennings[82] write that the choice of another individual may never emerge through lack of decisiveness "toward the person desired." The closing statement to this section continues to quote from this same source:

> The choices may often be half-conscious, often mere wishes. A person may not know toward whom he is "drawn." Sociometric tests therefore, ought to be constructed more and more in such fashion that they are able to embrace as far as possible the full complexity of the actual interrelations existing in the population. The more flexible the procedure is made, the more it becomes capable of tapping these concrete actualities.[83]

C. Literature on Pre-Adolescent and Early Adolescent Personal and Social Development

Physiological Aspects. The studies dealing with the physical maturation of the pre-adolescent and early adolescent which influence his social situation are important to this study, for the 7A vocal music classes are made up of children of this age. The numerous and far-reaching studies, such as the California Adolescent Growth Study[84] and those by Havighurst,[85] to cite only

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[82] Moreno and Jennings, "Statistics of Social Configuration," op. cit., p. 345.

[83] Loc. cit.

[84] Harold E. Jones, "The California Adolescent Growth Study," Journal of Educational Research, 31:561-567, April, 1938.

two, reveal that this age youngster has received considerable attention from the research workers.

"Early adolescent," writes Baker, "has long been recognized as a period of profound growth and structural change. . . . The soundest conclusion to be drawn from the available data is that growth during the early adolescent period is not uniform or predictable in character."[86] Uniformity of growth could be a statistical but not an individual reality. His statement bears out our observation that on the whole girls twelve years old "as a group are larger than boys in all physical proportions." But he adds that girls are likely to excel the boys in physical activity. "Much of the awkwardness and embarrassment of the adolescent period arises out of the effort of youth to manipulate and to adjust to parts of the body which are new and strange to them, or which have developed unusual and seemingly unmanageable proportions."[87]

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[85] Robert J. Havighurst and Hilda Taba, Adolescent Character and Personality, New York: John Wiley and Sons, Inc., 1949, 315 pp.

[86] G. Derwood Baker, "Years of Transition: Pre-Adolescent and Early Adolescent Development," Progressive Education, 15:544, November, 1938.

[87] Ibid., p. 545.

Dimock's findings show several concrete ways in which physiological growth affects the development of the attitudes, interests, and behavior of the adolescent. He writes:

> We have observed that the physical size of the boy may tend to permit or exclude his participation in certain activities. The early pubescent may "get the jump" on his prepubescent friend in driving his parents' car. The larger boy may have a better chance for the high-school football team, while the smaller boy finds his place in the orchestra or the dramatic club.[88]

The results of his study also show "that boys of average physical development may tend to be better integrated in attitude and better adjusted in behavior than even those of distinctly superior physical development."[89]

Meek makes the following observation concerning adolescents:

> In the attainment of adequate relations with their peer, physiological maturing seems to have an important part. . . . The greatest hazards, we can venture, are for those who deviate markedly from the majority of their associates, with less difficulty for those who had advanced than for those who are slow in maturing. . . . Such things as bands on teeth, eyeglasses, acne, and the like, become emotional problems as the boys and girls become conscious of their place among their peers.[90]

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[88] Dimock, op. cit., p. 269.

[89] Ibid., p. 88.

[90] Lois Hayden Meek, "The Immediate Social Relations of Students in Junior and Senior High Schools," Progressive Education, 15:613, December, 1938.

The most complex physical and emotional change is associated, of course, with the adolescent's sexual maturity. At times, Zachry[91] states, his body and its new characteristics and urges completely preoccupy him. Dimock concludes, however, that the changes observed during adolescence "appear in the main to be unrelated to pubescent development. Even when growth in certain factors is associated with chronological age, it is independent of the pubescent factor. . . . The development of the person, whether adolescent or otherwise, is the result of the intimate interaction of the physiological organism and the social world of the individual."[92]

No parallel was found between physical maturity and religious thinking in Dimock's[93] study of the adolescent boy. Religious thinking, he reports, ceased to grow at about thirteen, and it seemed to be influenced by social and cultural factors. Dennis[94] believes that

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[91] Caroline B. Zachry, "Some General Characteristics of Adolescence," Progressive Education, 15:596, December, 1938.

[92] Dimock, op. cit., p. 268.

[93] Ibid., p. 169.

[94] Wayne Dennis, "The Adolescent," Manual of Child Psychology, Leonard Carmichael, editor; New York: John Wiley and Sons, Inc., 1946, p. 651.

religious interests are no more to be associated with adolescence than at any other stage of life.

From his study of the adolescent Fleming comments:

> Adolescents differ in rate of development as well as in regularity of growth. They come from homes with differing attitudes toward themselves as individuals and toward the importance of their acceptance as members of specified social groups. . . . All of them, however, are experiencing certain of the physical changes accompanying pubescence; and all of them are engaged upon the problems of adjustment consequent on their emerging status as adults in a world of men and women. There is therefore observable in each one both the actual fact of growth into a maturity of greater or lesser physical perfection and the accompanying impulse towards development into a condition of greater or lesser social competence.[95]

Personality and Character Aspects. Some popular writings which have been best-sellers on the non-fiction list because of a psychological flare might better be placed on the fiction list. Such topics as how to be the life of the party, how to make friends, and how to improve one's social position are popular with the reading public.

In this connection Bonney writes,

> Popularity is not the superficial thing it is often assumed to be, but is rather tied up with the most basic traits of personality and character. . . . Strong, positive traits and friendly attitudes seem

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[95] C. M. Fleming, Adolescence, New York: International Universities Press, Inc., 1949, p. 143.

> to be about equally important, but it is possible that the latter are more important than the former.[96]

In his study of popular and unpopular children, Bonney reported that none of the five most unpopular children had ever been observed in the school situation performing a "genuinely unselfish act." The unpopular children were extremely slow in volunteering to help others who were in difficulty, bringing from home materials which were needed in a class project, or inspiring others to experience a higher level of conduct. These unpopular children were noted for pouting and defensive tactics, gossiping, bad temper, destroying property and displaying other types of aggressive behavior.[97]

Bonney cautioned the reader about assuming that there was either a "popular" or an "unpopular" type. He writes, thus:

> It is, of course, evident that there are a large number of desirable traits which the socially accepted children, as a group, possess to a much greater extent than do the poorly accepted ones. But it is pointed out that no one individual either popular or unpopular meets all the specifications and that there is considerable overlapping between individuals in the two groups such that the picture

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[96] Bonney, "Personality Traits of Socially Successful and Socially Unsuccessful Children," op. cit., p. 453.

[97] Bonney, Popular and Unpopular Children, A Sociometric Study, Sociometry Monographs, No. 9, New York: Beacon House, 1947, p. 73.

> is one of unique patterns rather than one of types. This means that a person is liked or disliked, not because of particular traits, but because of his whole personality structure and the total impression he makes on others.[98]

Symonds has not found the "persistent tendencies" of a personality dependable enough to make conduct predictable. "Conduct," he writes, "is a dynamic relationship between situation and response, so that what conduct may be expected from a person is a secret hidden in the nervous system, only to be discovered by the actual reactions a person makes."[99]

Some actions on the part of the adolescent which seem infantile to the adult will be better understood when the above statements are given consideration. When these actions occur, the adolescent is often resorting to the only action he knows as a retreat. Some of the actions which Blos says are an attempt for the adolescent to gain relief from strain are the "breakdown of good habits, the return to dirt, disorder, and greediness, the resumption of neurotic fears and nervous habits, of restlessness and instability, the renewed interest

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[98] Ibid., p. 75.

[99] Percival M. Symonds, Diagnosing Personality and Conduct, New York: D. Appleton Century Company, 1931, p. 529.

in concrete manipulation as opposed to creative activities that call for emotional expression."[100] Blos continues,

> Though it is a universal process at pre-adolescence, the return to early childhood satisfactions is manifested in characteristic forms that differentiate boys from girls. Whereas boys show a disintegration of established inhibitions through their aggressive and destructive behavior as well as their great disregard for cultural and social refinement, girls are likely to live through this period less dramatically. They often display lady-like manners; but they are nonetheless touchy and easily hurt, and the breakdown of their established conduct reveals itself in one form or another.[101]

As examples of this breakdown of established conduct Blos cites loudness, vulgarity, boasting, sophistication, secrecy, atrocious stories of behavior, not recognizing a teacher met on the street, and nail biting.

Baker comments on the acceleration expected in our society of a child who has become accustomed to adjusting to his situation and then at adolescence is expected to shift to adult standards. The egocentric patterns of childhood are modified to accept the broader view of the normal adolescent evaluating himself in terms of the outside forces, or they become more firmly fixed and development is arrested on the childhood level.[102]

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[100] Peter Blos, The Adolescent Personality, New York: D. Appleton-Century Company, 1941, p. 280.

[101] Loc. cit.

[102] Baker, op. cit., p. 546.

What a child thinks is right to do, and what he does was studied by Hartshorne and May.[103] They showed that under ordinary circumstances there is little consistency between the two. However, as a member of a group there was consistency in what the group recognized as standards and the behavior of the members of the group in meeting those standards. Dimock agrees with the above. Since conduct consistent with moral ideals seems to be conditioned by the child's associates and his position of status in the group, Dimock urges educators to accept this fact. Moral practices can be changed as the child is given the opportunity of a recognized position of worth in a cohesive group that is eager for these changes.[104]

Moral knowledge, Dimock found, is shaped in adolescent boys more by the socio-economic factors of the home, intelligence, and companions.[105] Ligon, an educational psychologist working with the entire family through the religious program in preference to the public school, believes that each age level has specific attitudes which

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[103] Hugh Hartshorne, Mark A. May, and Frank K. Shuttleworth, Studies in the Organization of Character, New York: Macmillan Company, 1930, p. 399.

[104] Dimock, op. cit., p. 200.

[105] Ibid., p. 257.

can best be learned at that particular age. Ligon considers it futile to try to teach character traits before the child is ready for them. Furthermore, he stresses teaching character traits in the proper step-by-step fashion.[106] For the goal in his character education plan calling for the possession of a dominating purpose as service to mankind, at the junior high school level is interpreted to be learning persistence and dependability.[107] He makes this comment,

> The concepts which we are trying to teach our teen-agers are so complex and difficult that unless parents do discuss them intensively and bring about repetition, understanding, conviction and application at home, there is hardly even a remote chance that youth can learn them.[108]

The obligation of the public schools to contribute to the child's social effectiveness is discussed by one of the leading music educators in this country, Lilla Belle Pitts. She writes:

> Normal persons are born with an urge to live up to the full capacity of their innate potentialities for fulfilling growth. And whatever we choose to call the outcome of such development--a full life, a fruitful life, a rich life, or a good life--the inference, in each case, is a life made more abundant by individuals who have the ability to make increasingly

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[106] Ernest M. Ligon, A Greater Generation, New York: The Macmillan Company, 1948, p. 34.

[107] Ibid., p. 31.

[108] Ibid., p. 110.

> effective social adaptations. All the material wealth in the world and the entire sum of human knowledge would be of little account, if a person --man, woman, or child--should find himself cast out by his social group. It seems then, to be an inescapable conclusion that one of the manifest functions of the school curriculum, with all its ramifications, is to contribute continuously to the development of personalities who will be able to maintain wholeness of growth by meeting, more effectively, the demands of modern group life.[109]

Social Aspects. Recently there has been a new emphasis on the social maturation of the adolescent. Psychologists have joined the study with sociologists, for now it is not enough to describe an individual in terms of his mental state and bodily responses. These are interpreted in relationship to other human beings, and that they have an influence on others is recognized. This circular type of response experienced by the individual in his environment is accepted. Healy states, "The individual is always doing something to his environment; his environment is continually doing something to him; to the latter he responds with a further reaction, and in turn the environment also shows a reactive response."[110] This is equally true in the junior high

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[109] Lilla Belle Pitts, The Music Curriculum in a Changing World, New York: Silver Burdett Company, 1944, pp. 81f.

[110] William Healy, Personality in Formation and Action, New York: W. W. Norton and Company, 1938, p. 27.

school classroom, for the child is influenced by the junior high environment while he is at the same time affecting that environment. This environment in the junior high school is of much wider social range than that he experienced in the elementary school. The associations are more heterogeneous in respect to age, race, socio-economic background, ideals, interests, attitudes, and customs. The junior high school pupil, the longer he is in the school, is likely to consciously strive increasingly to do, say, and be the type of individual that will meet with the approval of his close associates. Zachry writes, "In a desire to be liked by his own group, the adolescent usually does his best to conform to its standards, even at considerable cost to himself."[111] This intense desire to be thought well of by peers of course comes at a time when the child is beginning his break from close parental care, and prestige with the group gives him the security which he needs. Blos writes on this subject,

> The social behavior of the child toward his contemporaries undergoes profound changes during adolescence. Whereas in the period preceding adolescence the family and the school are the important agencies affecting the child's behavior and representing guiding principles in his life, this more or

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[111] Caroline B. Zachry, Emotion and Conduct in Adolescence, New York: D. Appleton-Century Company, 1940, p. 355.

> less unrivaled role is slowly transferred to the group of peers of which he is a member. Group opinion serves, then, as a selective influence for desirable and undesirable behavior, and the approval and disapproval of peers becomes progressively the most influential force in motivating adolescent conduct.[112]

Tryon describes the peer culture as unlike adult-controlled training institutions of our society, for peer groups do not regard themselves as training units.[113] But boys and girls work at their developmental program so intensely that it "often brings them into conflict with the purposes and objectives which adults have set up."[114] In fact, adults are often unable to understand the logic behind the demands of conformity to the peer culture. Goodenough writes,

> For the adolescent there can be no stronger argument for having or doing a thing than the fact that "all the others are doing it." Nothing is likely to awaken so great an emotional disturbance or cause so much worry as the feeling that he is in some way different from the others. "Others" in this case, means the other members of his own particular group; he is not especially concerned about resembling those belonging to some other clan. A fashion started by the leaders of a group, even though it may happen to be uncomfortable or inconvenient, is faithfully copied by all the lesser

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[112] Blos, op. cit., pp. 248f.

[113] Caroline M. Tryon, "The Adolescent Peer Culture," The Forty-Third Yearbook of the National Society for the Study of Education, Adolescence, Part I, Chicago: The Department of Education, The University of Chicago, 1944, p. 217.

[114] Ibid., p. 219.

> members. Opinions, prejudices, beliefs, likes and dislikes are likewise determined by the group, and the boy or girl who differs is made to feel the force of group ostracism unless he has sufficient force of personality to bring the others around to his point of view.[115]

The change of the adolescent's physical state necessarily shakes his feeling, Lewin comments, of the "stability of the ground on which he stands and perhaps even in the stability of the world at large." This insecurity is likely to lead to highly aggressive or highly sensitive behavior.[116] "The uncertain character of the ideals and values (of the adult world) keeps the adolescent in a state of conflict and tension which is the greater the more central these problems are."[117] Lewin sees a resemblance between some of the behavior symptomatic of the marginal man and adolescent behavior. Not only his oversensitiveness, but also his easy shifting from one extreme to another, and particularly his criticalness of the shortcomings of those of lower status, especially children.[118]

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[115] Florence L. Goodenough, Developmental Psychology, New York: D. Appleton-Century Company, 1945, pp. 492f.

[116] Lewin, "Field Theory and Experiment in Social Psychology," op. cit., p. 877.

[117] Ibid., p. 881.

[118] Ibid., p. 882.

Concern has been expressed by Davis over the fact that the various levels of society are not recognized in the public schools. Obviously, the children of the middle-class status will achieve more than those either in the lower-class or the higher-class groups in situations which emphasize middle-class objectives and principles. He writes,

> The middle-status way, with its emphasis upon respectability and morality, upon property, money and other symbols of attainment, upon organizational ties which dramatize one's adherence to group goals, upon self-improvement through education, or book clubs, or art and music clubs, and upon community improvement through the church, the civic organizations, and the school, this way of life which is so obnoxious to Bohemians, aristocrats and slum dwellers, is carried on by people who are culturally motivated to suffer, to renounce, to postpone gratifications in order to achieve.[119]

Children of the middle-class are, therefore, submitted to various pressures, strivings, deprivations, and anxieties in order that they may attain in the educational and socialized status the approval of the adults of this class.

Davis says that the motivation of the lower-status children lies first in their being convinced that real rewards exist for them as a result of working hard and sacrificing for certain goals. "Our society cannot hope,

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[119] Davis, op. cit., p. 212.

therefore, to educate the great masses of lower-class people in any really effective manner until it has real rewards to offer them for learning the necessary anxiety."

The aggressive behavior of adolescents from the middle-class families is turned into forms of social and economic skills while the lower classes "not uncommonly teach their children and adolescents to strike out with fists, sticks, or axes in free-for-all family encounters." According to Davis this is an "approved and socially rewarded form of behavior in their culture."[120]

A statement based on the principles of comparative psychology is made by Davis which has far-reaching implications for schools:

> . . . In order to decide whether an individual in American society is normal or neurotic, one must know his social class--and likewise his ethnic culture. His social reality and, therefore, all his social drives, goals, and values, are determined by his culture. He may be quite poorly oriented with regard to middle-class culture, simply because he has not been trained in it and, therefore, does not respond to its situation. If his behavior is normal for lower-class culture--which clinicians, teachers, and guidance workers do not usually know--he may appear to them to be "maladjusted," "unmotivated," "unsocialized," or even "neurotic."[121]

Zachry calls attention to the much neglected emotional factor which functions in the social development

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[120] Ibid., p. 209.

[121] Ibid., p. 211.

of adolescents. "How and to what extent the individual puts himself in another's place in his imagination depends greatly on his feeling about his own place. It depends directly, too, on his experience with others in affectional relationships, past and present. These two fundamentals of ethnics are interrelated in social growth.[122] Some adolescents have great difficulty in establishing close relationships on a reciprocal basis, or he may imagine hostilities or slights or wish to be the protected or dependent one in a friendship. These persons can be gradually guided with successful friendships away from this feeling.

A sense of reciprocal human relationships can be developed, Piaget[123] believes, only by the individual participating in group activities. In this way the child can develop a loyalty and sense of inner responsibility toward others. Otherwise the individual may feel that group relationships have been pushed upon him.

On the whole observations of adolescents in groups show an optimistic outlook. Zachry is typical in writing,

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[122] Zachry, Emotion and Conduct in Adolescence, op. cit., p. 145.

[123] Jean Piaget, The Moral Judgment of the Child, London: Kegan, Paul, Trench, Trubner and Company, 1932, p. 90.

"One is impressed by their essential courage, vigor, and faith in themselves. They give the impression of on-goingness."[124]

D. Summary

In this chapter an attempt has been made to integrate the pertinent substantiated findings of others working in the field of social psychology, and it is upon their major contributions that the preliminary assumptions of this study are based. The writer is deeply indebted to the authors of these earlier studies.

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[124] Zachry, "Some General Characteristics of Adolescence," op. cit., p. 597.

CHAPTER III

GROUPS STUDIED, INSTRUMENTS AND MATERIALS USED

A. Introduction

In this chapter detailed descriptions will be given of the experimental and control groups, of the selection and development of the instruments, and of the organization of the group self-study materials.

B. The Groups Used

Two 7A Vocal Music classes at Pattengill Junior High School, Lansing, Michigan, were chosen for this study which was made during the second semester of the 1949-1950 school year. Approximately 1,315 pupils were enrolled in Grades 7, 8, and 9 in Pattengill, one of three Lansing public junior high schools. Vocal music and its alternative--general art--were elective subjects in grade 7A.

Pupils were placed in the 7A vocal music classes by the usual procedure of alphabetical blocks arbitrarily assigned in the principal's office. In the early stages of this study, besides the 7A classes, two vocal music classes of eighth and ninth grade girls were included. It was found, however, that one of the two classes had a predominance of 8B girls and the other of 9A girls.

Obviously, the 8B girls would have had the opportunity to know each other for only two semesters in the junior high school, at most, while the 9A's might have known each other for five semesters. These two groups, therefore, were not comparable. Re-scheduling the classes of these girls to attain two groups of greater similarity would have involved shifting the class loads, by a redistribution of pupils, for many other teachers in the junior high school. Since this was not administratively feasible, the eighth and ninth grade vocal music classes were dropped from this study.

Characteristics of Pupils in the Experimental and Control Groups. 1. Sex. No attempt was made to equate the 7A music groups. They were purely random groups administratively established representing a typical school situation rather than experimentally equated groups. The distribution by sex of the pupils in the experimental and control groups is given in Table I. There were fewer boys in the experimental group which was the larger class. It might be mentioned here that for many years only girls had been permitted to take vocal music at Pattengill. This particular semester was the first that 7A boys had been permitted to enroll for vocal music.

TABLE I

DISTRIBUTION OF PUPILS BY SEX IN 7A VOCAL MUSIC CLASSES

	Experimental Group	Control Group
Number of Boys	10	15
Number of Girls	37	30
Totals	47	45

2. Chronological Age. These two 7A unselected vocal music classes, typical of the unstructured classroom situation, showed an unexpected similarity in age. Table II shows that the average age of the boys and girls in the experimental group was 12 years, 9 months; in the control group, 12 years, 10 months. The standard deviatio indicates greater variation in the experimental group with 8.11 months as opposed to 7.6 months in the control group. The range in age of the experimental group was 11 years, 7 months to 14 years, 11 months. The age of the control group began at 11 years, 4 months and extended to the same upper range as that for the experimental group, 14 years, 11 months.[1] The difference in the age range was 3 years, 4 months for the experimental group and 3 years, 7 months for the control group. This great difference in age in these 7A classes presents a definite problem in itself, but how to adequately meet the vocal music needs of the

[1] See Appendix; Tables XXXVI to XXXIX.

TABLE II

RANGE, MEAN, AND STANDARD DEVIATION IN AGE OF PUPILS IN 7A VOCAL MUSIC CLASSES

Groups	Range	Mean	Standard Deviation (in months)
Experimental	11/7-14/11	12 years, 9 months	8.11
Control	11/4-14/11	12 years, 10 months	7.6

boys and girls in this wide age range will be left for another study.

3. Intelligence Score. The pupil's raw score on the Henmon-Nelson Test of Mental Ability was used for this measure. The score was secured for each student from his office record card. Table III shows the mean of the comparative measure of the intelligence factor to be 101.85 for the experimental group and 99.29 for the control group. The mean of the experimental group was 2.56 points higher than that of the control group. This was not statistically significant. The range in scores was more extreme both at the upper and lower ends of the scale in the control group, for the standard deviation for the experimental group was 15.75 and for the control group was 18.69

4. Scholastic Average. Data for the pupil's scholastic average of his six first semester classes were also secured from the pupil's office record card. All marks

TABLE III

RANGE, MEAN, AND STANDARD DEVIATION OF INTELLIGENCE SCORES OF PUPILS IN 7A VOCAL MUSIC CLASSES

Group	Intelligence Score		
	Range	Mean	Standard Deviation
Experimental	71 - 128	101.85	15.75
Control	60 - 141	99.29	18.69

appeared as A, B, C, D, or E, and numerically equal to 96-100, 90-95, 80-89, 75-79, and 74 and below, respectively. The A grade was accepted as 98, mid-point between 96 and 100; B as 92.5; C as 84.5; D as 77; and the E grades were numerically assigned after consultation with the teacher in whose class the pupil received the mark. The range of the averages was similar. The mean of the scholastic average is given in Table IV.

TABLE IV

RANGE, MEAN, AND STANDARD DEVIATION OF SCHOLASTIC AVERAGE (FIRST SEMESTER) AND MUSIC MARK (FIRST SEMESTER) FOR PUPILS IN 7A VOCAL MUSIC CLASSES

Group	Scholastic Average			Music Mark		
	Range	Mean	S.D.	Range	Mean	S.D.
Experimental	60-98	83.34	8.21	65-98	85.98	8.36
Control	58-98	85.69	9.28	59-98	84.29	9.83

This was 83.34 for the experimental group, or 2.35 lower than the scholastic average in the control group. The standard deviations of the experimental and control groups were 8.21 and 9.28, respectively, which showed greater diversity of scholastic averages within the control group.

5. Music Mark. The first semester's final music mark was taken from the teacher's final average of class marks which showed a nearer approximation to the numerical average by the added information of plus and minus signs. The mean of the music mark was 85.98 for the experimental group with a standard deviation of 8.36, and 84.29 for the control group with a standard deviation of 9.83. The range was 65-98 for the experimental group and 59-98 for the control group. These differences were not found to be statistically significant. The above figures appear in Table IV.

6. Occupation of Parent. The occupation of the parent was assumed to indicate, to a certain degree, the family's socio-economic status. If the child was not living with the parent, or received no financial help from the parent, the occupation of the wage-earner in whose home the child was living was accepted. Because the parent's or guardian's occupation was found to be

incompletely recorded on many enrollment cards, the Lansing City Directory[2] was consulted to complete and verify the occupation of parents. An assignment of the occupation to a major group category, which is roughly indicative of the training required to do a specific job, was made with the aid of the Dictionary of Occupational Titles.[3] The wage level closely associated with socio-economic status was assumed to be related to the amount of training necessary for a particular job, but while occupational status of the parents and their socio-economic status tend to show a positive correlation they were not assumed to be the same. Table V presents the per cent distribution of occupations in the United States and the occupations of the parents of the vocal music classes. A comparison of these figures showed that 17 per cent and 16 per cent of the occupations of the parents of the experimental and control groups, respectively, were represented in categories VII and VIII; and 27 per cent of both groups were represented in categories II and

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[2] Polk's Lansing (Ingham County, Michigan) City Directory, 1949-1950, Vol. 44, Detroit: R. L. Polk and Company, 1950. pp. 29-816.

[3] Division of Occupation Analysis, Dictionary of Occupational Titles, Volume II, Second Edition; Washington, D. C.: United States Government Printing Office, 1949, pp. 1 to 423.

TABLE V

PER CENT DISTRIBUTION OF OCCUPATION GROUPING IN THE UNITED STATES[4] AND OCCUPATION OF PARENTS OF PUPILS IN 7A VOCAL MUSIC CLASSES

Category	Occupation	United States		Experimental Group		Control Group	
		Number	Per Cent	Number	Per Cent	Number	Per Cent
VIII	Professional and Semiprofessional	3,678,000	6%	2	4%	3	7%
VII	Farmers, Proprietors, Managers and Officials	11,457,000	18%	6	13%	4	9%
VI	Clerical, Sales, and Kindred Work	11,084,000	18%	1	2%	6	13%
V	Craftsmen, Foremen, and Like Workers	7,578,000	12%	12	26%	11	24%
IV	Operative and Kindred Workers	11,545,000	18%	7	15%	5	11%
III	Service Workers, Domestics included	6,318,000	10%	6	13%	4	9%
II	Labor, Industrial and Farm	8,061,000	13%	9	19%	9	20%
I	Odd Jobs, Unemployed, and Pensioned	3,100,000	5%	4	8%	3	7%
	Totals	62,822,000	100%	47	100%	45	100%

[4] United States Department of Commerce, Bureau of Census, Statistical Abstract of the United States, 1949, Washington, D. C.: United States Government Printing Office, 1949, p. 188.

I, although the specific assignment of the number of occupations within the two categories of these upper and lower brackets were not the same.

By multiplying the number of jobs in the category by the number of the category itself, a weighted score was obtained. This score gave a comparative ratio of 4.1 for the experimental group and 4.4 for the control group.[5] It will be observed that this mean lies close to the standard set up for category IV and below the national mean which lies within category V.

An interesting characteristic followed by both groups, but one that was not consistent with the national standards, was found in the large number of parent's occupation within category V, Craftsmen, Foremen, and Like Workers; and category II, Labor, Industrial and Farm. The occupation of the parents of 45 per cent of the experimental group and 44 per cent of the control group were included in these two categories. This striking difference from the national grouping can be explained, of course, by the fact that Lansing's principal industry is manufacturing.

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[5] See Appendix; Table XL.

7. Stability of Community. The question of whether or not a community slightly below the national average in occupation might also be a community of considerable migration was raised. The length of time pupils had been in the community was also considered a factor contributing to the pupil's social status in the school. The data of Table VI show that 32 pupils or 69 per cent of the experimental group and 30 pupils or 67 per cent of the control group had lived at the same address or moved but once since their entrance in grade school. The two pupils in the experimental group and

TABLE VI

FREQUENCY AND PER CENT CHANGES OF ADDRESS OF PUPILS IN 7A VOCAL MUSIC CLASSES

Number of Changes in Address	Experimental Group		Control Group	
	Number	Per Cent	Number	Per Cent
One Address	17	37%	16	36%
Two Addresses	15	32%	14	31%
Three Addresses	4	8%	5	11%
Four Addresses	5	11%	6	13%
Five Addresses	4	8%	3	7%
Six or More Addresses	2	4%	1	2%
Totals	47	100%	45	100%

the one in the control group, who could remember that they had lived at six or more addresses, explained in each case that this was due to their family living with the father during World War II. This necessitated their frequently moving with him from one assignment to another.

8. Elementary School Attended. These boys and girls, for the most part, come from the neighboring elementary schools. However, 28 per cent of the pupils in the experimental group and 24 per cent of those in the control group were from outside the school district. That is, they were either non-resident tuition pupils, or they had moved into the district from other places. Table VII shows the frequencies of the elementary schools attended by the boys and girls in the experimental and control groups.

9. Home Rooms. Each 7A pupil has a home room which was assigned him when he first came to the building as a 7B. The question of how much effect the home room had on forming friendship patterns among the pupils and thus affecting their social acceptability status arose. The number of pupils in the eight home rooms is given in Table VIII.

TABLE VII

FREQUENCIES OF ELEMENTARY SCHOOLS ATTENDED BY PUPILS IN 7A VOCAL MUSIC CLASSES

School	Experimental Group	Control Group
A	4	5
B	2	2
C	1	2
D	8	10
E	7	6
F	3	1
G	5	-
H	2	4
I	2	4
Out of District	13	11
Totals	47	45

TABLE VIII

FREQUENCIES OF HOME ROOMS OF PUPILS IN 7A VOCAL MUSIC CLASSES

Home Room	Experimental Group	Control Group
101	2	-
108	8	5
200	4	9
201	11	5
207	4	6
210	10	10
301	6	6
302	2	4
Totals	47	45

Educational Factors. The general school factors pertaining to the experimental and control groups were the same except for the time of day each class was held. Classes were held for 48 minutes daily for the five school days. The experimental group met in the afternoon from 12:46 p.m. to 1:34 p.m. The control group met from 9:50 a.m. to 10:38 a.m. Both classes had the same teacher, the class was held in the same room, and both groups used the same vocal music course of study and instructional materials. The experimental group had, of course, the ten to thirty minutes a week on the self-study materials while the control group continued with the vocal music classwork. This ten to thirty minutes was used by the control group to learn an extra song.

C. Selection and Development of Methods and the Sociometric Instrument

There are other means besides the sociometric test which offer information about group relationships. The methods and measures to be described in this section were tried and used, modified or rejected according to the advantage or disadvantage each offered this study.

Observation Method. One procedure in common practice has been observing and recording the social behavior of a child in relation to the group as a whole.

This method has been described in detail by Driscoll.[6] Zeleny[7] and Jones[8] have shown the advantages of this method in describing an individual's social behavior, such as ignoring others, exhibiting friendliness or hostility, in his group relationships. This required a meticulous assembling of detailed notes on the social activity of each pupil of the group. The "spontaneous" behavior and multiple observations of ways in which an individual affected his group and was influenced, in turn, by those in the group, ways in which the individual maintained prestige, how he gained the attention of those about him, manifestations of social confidence, the separation of the group into pairs and cliques, and verbatim accounts of conversation were among the items recorded. The teacher was expected to break the habit of appraising all behavior as good or bad, and rather to look for the causes of behavior. To simplify the

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[6] Gertrude Driscoll, How to Study the Behavior of Children, New York: Teachers College, Columbia University, 1941, p. 9f.

[7] Leslie Day Zeleny, "Status: Its Measurement and Control in Education," Sociometry, 4:193-204, February, 1941.

[8] Harold E. Jones, "The California Adolescent Growth Study," Journal of Educational Research, 31:561-67, April, 1938.

observation method, Arrington[9] has recommended applying the time-sampling technique, that is, recording a specific behavior as occurring or not at a particular time. Goodenough[10] has placed emphasis on the value of this device, for the situations under which the observations are to be made can then be controlled.

The observation method has been used in this study only as it augments the data secured by the sociometric test. The observation method was rejected as the sole measurement for this study for three reasons. (1) The teacher's view-point of the child's behavior was of less concern than the pupils' reaction to each other. To see more clearly each pupil through the eyes of the group as a whole was considered essential. (2) The student-teachers from Michigan State College were willing to observe or teach alternately with the classroom teacher to make employing of this method possible, but the morning and the afternoon student-teachers were not the same individual. Naturally, two different student teachers

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[9] Ruth E. Arrington, "Time Sampling in Studies of Social Behavior: A Critical Review of Techniques and Results with Research Suggestions," Psychological Bulletin, 40:81-124, February, 1943.

[10] Florence L. Goodenough, "The Observation of Children's Behavior as a Method in Social Psychology," Social Forces, 15:476-479, May, 1937.

did not elicit the same response from the classes. The student-teachers were, therefore, not a part of this study. (3) With 45 pupils in each class, this method was laboriously taxing and time-consuming.

Anecdotal Records. Because of their on-the-spot nature, anecdotal records have been recommended as more flexible and more adaptable to the busy teacher's schedule. Jottings at the time of the occurrence were later gathered together and studied for sequential patterns of social behavior. The anecdotal record has been used as supplementary to the sociometric data of this study with no attempt made to set up the material found by this means as an instrument of comparative measure. This suggestion to teachers for using the anecdotal record with sociometric tests is presented in Helping Teachers Understand Children:

> We question whether teachers should undertake sociometric tests of their classes unless they also are keeping anecdotal records about the children. There is always the danger that the visual symbolization of the data on a sociogram will convey to the teacher the idea of a fixed and certain scientific reality. . . . Such a static interpretation of the data is most unsound and unreliable. . . . Good descriptive anecdotal records of children's interaction are needed to confirm and to suggest alternatives to the interpretations initially made from sociograms.[11]

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[11] American Council on Education, Helping Teachers Understand Children, Washington, D. C.: American Council on Teacher Education, 1945, p. 362.

Social Distance. It is also possible to determine the social status of a classroom through the use of the social distance scale.[12] It extends the usual sociometric technique of choosing a few friends to the inclusion of a response from each individual toward every other child in the group. If the problem is one of merely finding the pupil's attitude toward others in the group and his acceptability by the group, the Social Distance scale could be recommended as a substitute for the sociometric test used in this study. The Social Distance scale is easier to score, and the acceptability score has a very high relationship to the social acceptability score of the sociometric test used in this study (.96) as was shown in an earlier study.[13] That is, the results from asking a question on a sociometric test concerning the pupil's choice of associates on going to a nearby park for a class period caused the pupils to choose the same friends as they had chosen on the Social Distance scale given the same week to the extent

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[12] Horace Mann-Lincoln Institute of School Experimentation, How to Construct a Sociogram, New York: Bureau of Publications, Teachers College, Columbia University, 1948, p. 26.

[13] Alice D. Nelson, "A Sociometric Study of a Seventh Grade Vocal Music Class," Unpublished Study, East Lansing, Michigan: Michigan State College, 1949, p. 23.

shown above. But there were considerable data obtained from the sociometric test used in this study and described later which were valuable in contributing to a more complete understanding of the social structure of the vocal music class. Furthermore, the pupils openly stated their objections to the statements on the Social Distance scale intended to indicate the pupil's degree of negative reaction to others: "Don't mind his being in our class, but I don't want to have anything to do with him," and "Wish he weren't in our class."

Guess-Who and Portrait Guess-Who. The Guess-Who and Portrait Guess-Who techniques are closely associated. They were designed by Hartshorne and May[14] to show a student's reputation among his classmates. Raths[15] later made adaptations of this type of test which demanded responses based more directly on the personality, character, and morale attributes of individuals. The Guess-Who has been used to decided advantage by Havighurst[16]

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[14] Hugh Hartshorne, Mark A. May, and Julius B. Maller, Studies in Service and Self-Control, New York: Macmillan, 1929, p. 77f.

[15] Louis Raths, "The Development of a 'Guess Who' Type of Test," Educational Research Bulletin, The Ohio State University, 22:70-72, 1943.

[16] Robert J. Havighurst and Hilda Taba, Adolescent Character and Personality, New York: John Wiley and Sons, Inc., 1949, p. 214-217.

and his associates, and by Tryon[17] in their studies of character and personality. Experience with the Guess-Who type of test prior to this study revealed that the majority of the students were unable to name enough of their classmates to give validity to their choices.

Pupils' Opinions of Each Other. One way of getting at the reasons behind an individual's actions toward the others of the group has been by finding out directly his opinions of the other pupils. This can be handled informally[18] or by a simple check list or questionnaire form.[19] These opinions might accompany the sociometric test as the pupil's reasons for his choices.[20] Each of these methods was tried, but none was used in this study in its entirety. Pupils of the seventh grade showed they were not particularly interested

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[17] Caroline M. Tryon, Evaluations of Adolescent Personality, Monographs of the Society for Research in Child Development, Vol. 4, No. 4, Washington, D. C.: National Research Council, 1939, 83 pp.

[18] Arthur I. Gates, et al., Educational Psychology, New York: The Macmillan Company, 1949, p. 586.

[19] L. L. Young, "Sociometric and Related Techniques for Appraising Social Status in an Elementary School," Sociometry, 10:168-177, May, 1947.

[20] Helen H. Jennings, Sociometry in Group Relations, Washington, D. C.: American Council on Education, 1948, p. 35.

in anything beyond the spontaneous choices they had made, for they ignored the opportunity to explain their choices or gave reasons for their choices that were obviously superficial. Their responses of who they liked and did not like seemed sufficient without being bothered with reasons for their answers. The giving of reasons for the responses was, therefore, disassociated from the sociometric test and used in the self-study part of this experiment.

Paired Comparisons. The method of paired comparisons has been applied to the evaluation of individuals on some personal or social trait. This method has been suggested[21] as a "criterion of validity against which to check any of the less accurate or less dependable methods of evaluating stimuli, either persons or things, attitudes or opinions, whenever the results of those less reliable methods are held in question." This technique was eliminated from the present study after an experience in an earlier study showed the pupils' feeling of inability or unwillingness to express themselves in regard to the question, "Who do you think gets along

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[21] J. P. Guilford, Psychometric Methods, New York: McGraw-Hill Book Company, Inc., 1936, p. 240.

better with others in your class, you or one of these other two?"

Personality and Character Tests. There have been many devices and instruments created to measure the various aspects of personality and character. These add their weight to the information about an individual's social relationships. Many of these measuring devices have been described by Symonds,[22] who has stated that an elaborate battery of tests is required to diagnose the complex aspects of character and that such a system of investigation, complicated as it is, does not even exist to aid in authoritatively determining the greater complexities of personality.[23] Bonney[24] proved to his own satisfaction that self-estimation personality questionnaires were of value in general and offer a rough measure of tendencies. Shaw[25] was inclined to believe

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[22] Percival M. Symonds, Diagnosing Personality and Conduct, New York: D. Appleton Century Co., 1931, 602 pp.

[23] Ibid., p. 567.

[24] Merl E. Bonney, "The Validity of Certain Techniques of Gathering Psychological Data, with Special Reference to Personality Questionnaires," Journal of Social Psychology, 13:119, 1941.

[25] Robert W. Shaw, Some Aspects of Self-Insight, New York: Bureau of Publications, Teachers College, Columbia University, 1931, p. 66.

that the response of the more timid students in self-analysis tests was often to be questioned. Confirmation of this fact was found on a similar test of this nature given in connection with an earlier study with seventh graders.[26] Although some value is to be found in each test of this type, the class room used in this study was not conducive to giving the necessary series of test, nor was the required amount of time available to administer these tests properly. The little time that was allotted to this study was believed better spent in furthering the dynamic theory of personality as it was manifest in the actual situation of the group itself. For this reason the sociometric test was chosen.

Teacher's Rating Scales of Pupils. Many teachers have found the rating scale of value in their study of pupil behavior. As early as 1928 Hsia[27] concluded:

> With the proper instruction the teachers can rate their own pupils on sociability with a considerable degree of accuracy. . . . The teachers' ratings and the combination of pupils' choices in invitations and voting situations show a reasonable agreement. The correlation in terms of Pearson r is .57 ± .03.

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[26] Nelson, op. cit., pp. 11f.

[27] Jui-Ching Hsia, A Study of the Sociability of Elementary School Children, New York: Bureau of Publications, Teachers College, Columbia University, 1928, p. 46.

A synthesis of agreement and tendencies in raters' scores in relationship to the extensive scale developed for the California Adolescent Growth Study has been explained in Newman.[28] It was, of course, important that the teacher be a good judge of the behavior of the pupils. A scale was designed to take care of specific aspects of the data necessary for this study, for there was nothing available which met the needs of the situation. There is a decided lack of worth-while material in this area. One authority[29] states this dilemma thus: "Mathematicians are working elaborate statistics on the most inaccurate, trivial, and psychologically uninteresting data."

Interviews. Conversation with the pupil or the formal interview has much to offer as enlightenment in determining why the pupil made the choices he did. Jennings[30] has recommended this means of ascertaining the motive values behind the resulting group patterns.

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[28] Frances Burks Newman, The Adolescent in Social Groups, Stanford University, California: American Psychological Association, 1946, p. 66f.

[29] R. Wolf and H. A. Murray, "An Experiment in Judging Personalities," Journal of Psychology, 3:364, 1937.

[30] Jennings, op. cit., p. 32.

Reuter[31] maintained that we can secure from the adolescent an abundance of material at first-hand which we have too long ignored. The adolescent, Reuter said, likes to talk, and especially about himself. Information, direct from the pupil, offers us a much more complete understanding of the facts underlying the social status of individuals in the group. The efficiency of the group interview as practiced by Edmiston,[32] in which the group opinion was sought, was found a promising means of better understanding group relations.

Projective Techniques. Not all individuals were able to respond to direct interview. The type of individual who was not might reveal his feelings more accurately in general discussions, story telling or written statements, especially those dealing with interpreting the meaning of music, daily logs, making original drawings or other types of art work, and role-playing. All of these techniques were utilized in this study to some extent to determine the means the various pupils were using to gain status, the specific content of certain

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[31] E. B. Reuter, "The Sociology of Adolescence," American Journal of Sociology, 43:414, November, 1937.

[32] Vivian Edmiston, "The Group Interview," Journal of Educational Research, 37:593-601, April, 1944.

human relationship patterns, and related group behavior. Marburg[33] has suggested ways pupils could be aided in writing more freely of their personal reactions, and ways of tallying the information provided by a child's diary or log that would be meaningful in a specific field of reference. A social distance scale was set up by Runner[34] with "seven mutually exclusive zones," and she described how the raw material of a child's diary or log could be adapted to this scale. Reuter[35] also recognized the wealth of material the adolescent could furnish, and which could be secured in no other way, through diaries and self-recorded data of behavior and attitudes. Individual and group role-playing proved a useful substitute for the interview method where role functioning elicited pertinent facts that would otherwise have entailed probing and probably the usual withholding of information. Use of this technique is reported in a study made by Florence B. Moreno[36] of underprivileged

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[33] Francis W. Marburg, "Studying the Child's Social World," Journal of Educational Sociology, 21:537, May, 1948.

[34] Jessie R. Runner, "Social Distance in Adolescent Relationships," American Journal of Sociology, 43:428, November, 1937.

[35] Reuter, op. cit., p. 427.

[36] Florence B. Moreno, "Combining Role and Sociometric Testing--A Methodological Approach," Sociometry, 9:155-161, May, 1946.

ninth grade boys in the Harlem section of New York City. The English teachers might have assigned longer themes on the topics of when the pupils felt strange, left out, or fearful of new situations, but simple statements were sufficient for this study.

Sociometric Test. The fact that measurement could be made of the social status of each member of the group in a relationship that was real led to the acceptance of the sociometric test as the most valuable instrument for this study. Many characteristics of the test were favorable to this study. The sociometric test was simple to administer; it was not time-consuming; and the directions of the test were easily understood and followed by those taking the test. The data of the sociometric test gave a description of the inner organization of the group as a whole, as well as a quantitative measure of an individual's spontaneous reaction to other personalities in the group, and a quantitative measure of the reaction of all others in the group toward this particular individual. The sociometric data from the test were useful for discovering and evaluating changes in group structure and personality characteristics relative to status in the group, and the concepts could be operatively defined by their statistical results. The sociometric test was of value to this study also in

providing a method of indirect approach to matters which defied, in some cases, a straightforward answer.

The first attempts in measuring the interrelationships of the vocal music classes, made a year prior to this study, employed the Jennings method.[37] Each pupil was asked to select three classmates by whom he wished to sit, and he was offered the possibility of rejecting any classmates by whom he did not wish to sit. The data were then used in plotting a sociogram. This technique, valuable within itself in giving an understanding of the grou structure, failed in one respect important to this study. The limitations of this technique in providing the pupils with more awareness of the other members in the class was soon discovered. In addition to revealing the pupil's reaction to his friends, the technique to be used should make each pupil aware of the name of every other individual in the class, and the test should produce a set of data that would show the representative status of each pupil in the class with relationship to his classmates.

It was apparent that the class list could become the sociometric rating sheet. Subsequent sociometric tests provided each pupil with an alphabetically arranged

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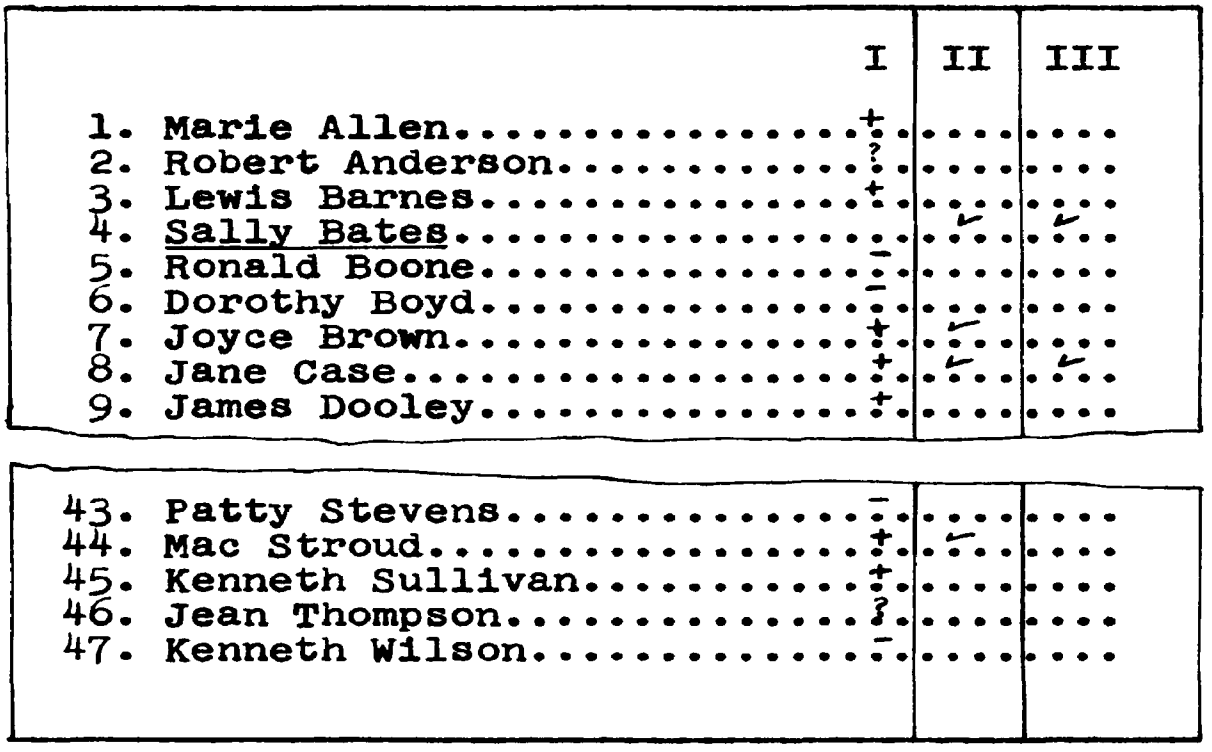
[37] Helen H. Jennings, Sociometry in Group Relations, Washington, D. C.: American Council on Education, 1948, pp. 12f.

list of the name of every pupil in the class. To the right of the column of names, three columns provided space for the pupil's responses. This is shown in Figure 1. A plus, minus or question mark was to be



	I	II	III
1. Marie Allen	+		
2. Robert Anderson	?		
3. Lewis Barnes	+		
4. Sally Bates		✓	✓
5. Ronald Boone	−		
6. Dorothy Boyd	−		
7. Joyce Brown	+	✓	
8. Jane Case	+	✓	✓
9. James Dooley	+		
43. Patty Stevens	−		
44. Mac Stroud	+	✓	
45. Kenneth Sullivan	+		
46. Jean Thompson	?		
47. Kenneth Wilson	−		

Figure 1.

PORTION OF PUPIL'S SOCIOMETRIC TEST RATING SHEET

placed after the name of each child in the first column to indicate, respectively, willingness to sit by the child named, preference to not be asked to sit by the child named, and not knowing the person whose name appeared. In the second column the student chose eleven other classmates with whom he wished to have a very

special chorus, and in the third column he chose three other classmates with whom he would like to sing as a quartet. The balance of parts was minimized in both the second and third columns, and the ability to work well together was stressed. The added columns provided automatically a weighted system, of the most desirable, the more acceptable, the accepted and the rejected. The answers to the sociometric test were made through experience with the individuals of the group. Immediate reaction prompted the answer, of which there was no right or wrong answer except as each individual saw it in relationship to his own happiness. The students knew that their expressed wishes would be carried out in so far as possible in the reconstruction of their immediate social relationships in the vocal music classes. The honesty of these answers did not need to be questioned.

D. Organization and Plan of Materials for Group Self-Study

Exactly what direction this phase of the study would take could not be entirely predetermined, for the subject matter would be based necessarily to some extent on what developed in the group discussions. But intending to rely on more than the inspiration of the moment, tentative plans were made before the group met.

Why Self-Study? In some schools the practice of permitting pupils to see each other's sociometric ratings, and the group working as a whole to aid the neglected children or to study and make improvements on other problems resulting from group situations has met with success. Lloyd-Jones[38] has recommended this practice, and has suggested that ratings should not be taken unless the children be permitted to share the information. A pilot study* using this procedure, however, proved that the short time allowed in the vocal music class was not sufficient to give the pupils access to the sociometric data, to explain the meaning of the numbers and their social implication and significance. In fact, it was recognized that insufficient background on the part of the pupil in interpreting the implications arising from the sociometric data might cause grave injury and serious misunderstandings. But the pupils were sensitive to each other without knowing the exact status of their classmates and they were able, if time were allowed for the activity, to discuss and learn by experience those behaviors which were conducive to the improvement of social status.

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[38] Esther Lloyd-Jones, "Centripetal vs. Centrifugal Guidance Programs for Children," unpublished lecture given for the All-College Lecture-Discussion on Education, Teachers College, Columbia University, New York, August 3, 1949.

* Refers to undocumented tryout.

The strong inner resistance of pupils to new social habits, it was apparent, would have to be overcome. For this age child, now seeking security in the junior high school, it was expected that group opinion and group decision would be a force of sufficient strength to challenge strongly, if not to break, the old forms of behavior. To be utilized to the fullest in this study were those tendencies innate with all groups: the natural desire to conform, excel, cooperate, and above all, the natural desire for group approval. It was assumed that if a child really wanted to be liked by his classmates that he would try, knowing others were truly interested in his efforts, to overcome some of his obnoxious modes of behavior. Therefore, change in this group, if such should occur, was expected to come from the pupils' recognition of their own real problems relating to social acceptance, the discussion of these problems following the best techniques of group practice, and the pupils coming to a group decision as to what line of action should be taken.

Direction of Group Self-Study. Guiding the learning in the proper direction could be considered the crucial point of this study. Would the study be of the social graces, how to impress others, how to wear a smile through the whole day? These undoubtedly would influence

social acceptability. Or would the more difficult problems be undertaken of recognizing the qualities of the well-adjusted boy and girl, attempting to change stereotyped thinking, and bringing about greater emotional stability? It was decided that the study was not worth the effort if it were based on anything less than the latter considerations, and that attempts to reconstruct attitudes and behavior in order that they might become more acceptable would necessarily have to proceed on the foremost principles set forth by mental hygiene experience and insight.

That change in group behavior is not brought about by lecturing, preaching or even reasoning was recognized. Experiences that offered true learning in the desired new direction of thought and accompanying broader outlook would have to be provided. Not only the classroom but also the corridors, the extra-curricular activities, the entire school, the home and the community all would have to become a part of the so-called social laboratory for each member of the group. In his total environment the pupil could consciously seek those modes of social behavior that were most acceptable, and he could freely practice them. Only through satisfying contacts with others would it be expected that these children would learn the bases of enriched group living.

In addition to experiencing a wide range of opportunities for social action, the group would need to learn to talk about itself. The group as a whole, it was recognized, would need to be encouraged to recognize group goals, those group values it holds highest, its aspirations, fears, likes, and to bring these matters to the verbal level for discussion. The vocal music classes, obviously, were unaware that they possessed these attributes.

Plan for Action. A schedule of events with respect to the school calendar was roughly drawn up. Some of the items concerned both the experimental and the control group. The preliminary schedule for this study is given in Table IX.

The key concepts to be emphasized were selected with respect to group needs apparent from observing other vocal music classes. The concepts chosen were to be experienced through group activities. Although these seventh graders were just entering the stage where abstract social concepts begin to take shape, this study places emphasis on the concrete, the practical, and the functional. Seventh graders are found to be interested in everything in the world that has a name, a number, a type or a classification, but rarely have seventh graders expressed an interest in theory.

TABLE IX

PRELIMINARY SCHEDULE FOR GROUP SELF-STUDY OF 7A VOCAL MUSIC CLASS, SECOND SEMESTER, 1950

Week	Event
1	Enroll classes. Get age, birthday, homeroom, grade school attended, and change in addresses. Make sociometric test; give test; and reseat classes. *Learn names of classmates.
2	Election of class officers. *Desirable qualifications for class officers. Write "What I like and dislike in others" opinions.
3	*Discussion of group activities in connection with operetta; and "What I like and dislike in others" opinions.
4	Operetta given. *Evaluation of group activities. Discussion of inner drives.
5	*Setting up group goals for next marking period.
6	*Discussion of emotions and possibilities of changing personality.
7	Secure I. Q., scholastic average, occupation of parents, elementary school attended from office cards. B. I. E. Day report; questionnaire on parent's occupation, pupils' vocational aspiration.
8	Second sociometric test; reseating. *Discussion of differences and likenesses in people.
9	*Discussion of prejudice. (Easter recess.)
10	*Discussion of qualities that make for popularity.
11	*Evaluation of goals for past marking period. Set new goals.
12	Moods in music. *Discussion of moods.
13	*Discussion of envy and jealousy.

TABLE IX (Continued)

Week	Event
14	*Discussion of making and keeping friends.
15	*Evaluation of group activities and goals. Set new goals.
16	Third sociometric test; reseating.
19	*Evaluation.

* These items concerned the experimental group only.

E. Summary

Throughout the description of the vocal music classes used in this study as the experimental and control groups, the fact that these groups were part of a practical school situation taught by a regular classroom teacher with no attempt made to set up previously equated groups has been emphasized. The instruments described here were chosen with an intent to elicit from the groups information relative to the stated hypotheses. The materials used in the group self-study experiment required a wide background of information, it will be seen, but the teacher makes no claim to specialized training as a psychiatrist or group therapeutist.

CHAPTER IV

PROCEDURES

A. Introduction

This chapter will give an account of the procedures used in administering the sociometric tests. The course of action taken with the group self-study project will also be described.

B. Administering the Sociometric Test

Four sociometric tests were administered to each group during the semester. All but eleven of the ninety-two children in the 7A vocal music classes, six in the experimental group and five in the control group, had experience taking a similar sociometric test at three different times during the previous semester. The classes are changed each semester and approximately half the experimental and half the control group had been together in the same vocal music class the preceding semester. Since eleven pupils were not familiar with the routine of taking the test, for their benefit the first test given in each group was approached as if none of the pupils had had previous experience with it.

To secure a more accurate estimate of a pupil's interpersonal relationships with those in his class, the

three major tests were made under the guise of the seating arrangement most advantageous to the one taking the test. It was believed that in this way spontaneous choices would be made more nearly in keeping with the way a pupil actually felt toward his classmates. The fourth test was given three days after the third test and in the same week. This test was to serve as a check on the data secured from the third test. Paradoxical as it may seem to the preceding statement, the test would also show something of the effect of a change of question on the sociometric data.

Every effort was made to secure as honest a response as possible. The pupil was assured that no one but the teacher would see the test. The test was taken as privately as possible with freedom from any feeling of coercion from those persons sitting near by who might try to look at the sociometric tests of the pupils adjacent to them.

The verbatim directions of the first sociometric test given were as follows:

> As you are well aware, our room is very small, and I need your help in arranging the best seating arrangement for this class. Tonite I intend to arrange the seating for this class. You will keep the seats assigned to you tomorrow for about seven weeks. You will then have another opportunity to choose persons you wish to sit near you.

We are passing to you a list of the names of the boys and girls in this class. By checking this list carefully you can indicate to me the boys and girls you prefer to have sit by you. Find your name and underline it. If your name does not appear on this list, or if it is misspelled, please raise your hand.

The names you check will be known only to the teacher. We are so close together in this room that I will ask you to cover your work carefully and to refrain from looking on the work of others.

Put your pencil on the Roman numeral I at the top of the page. Below this number you will make a plus sign after the names of those boys and girls you wish to sit by. Place a minus sign after the names of those boys and girls you would prefer not to be asked to sit by. Place a question mark after the names of those persons whom you do not know. (The teacher points to these signs on the blackboard so there can be no mistake in the meaning.) I will expect you to decide whether you wish to sit or not to sit by all the boys and girls you know. You may leave the space after your own name blank. There is no limit on the number of pluses, minuses, or question marks. Some of you may find that you know very few of the other boys and girls in this class. Your first column will be mostly question marks. When you have finished placing either a plus, minus, or question mark in the first column after the name of each person, please turn your paper over and wait for the rest of the class.

When you turn your papers right side up, you will place a check mark (show one on the blackboard) after your own name. Then, look at the plus signs you have made in the first column, and select from these the eleven other persons you would like to have sing with you in a special chorus of your own. Place a check mark in the second column to indicate each choice. The part they sing is not as important as that they are boys and girls you like to be with. How many checks will there be in the second column all together? (Teacher waits for answer.) Yes, not more than twelve, although you may have less if you do not know eleven people in this class you would wish to sing with you in a special chorus. Turn your papers over. Find column II. Place a

check mark in column two after your own name and the names of those you wish in your special chorus. Turn your paper over when you have finished, and wait for the others.

We often have small groups of people sing together in our classes. In column three you will first check your own name. This time you will look at your checks in column two and select the three singers you would like above all the others to sing with you in a quartet. The parts they sing are not as important as that you would like to sing in a quartet with them. How many checks will there be in the third column? (Wait for an answer.) Yes, not more than four. Turn your papers right side up again. Place a check after your own name. Now look at the names you have checked in column two. Select the names of the three boys and girls from these that you would like to sing with you in a quartet. Put check marks after these. When you have finished, fold your paper, and it will be collected.

The directions for the sociometric test given on March 21, the second sociometric test, resembled the above. The directions given with the third sociometric test included the fact that to enjoy the benefits of reseating before the end of the year, it would be necessary to check the class lists again. The fourth test was given the same week as the third sociometric test. On the fourth test the pupils were asked to place plus, minus or question marks after the names of the boys and girls they would be willing to sing with on the final examination. One part of the final examination is singing with a small group.

After the classes had been reseated according to the choices on the sociometric tests, tabulation of the

data was deliberately postponed until after the close of the semester. This was done to preclude knowledge of the sociometric status of any child influencing the teacher to offer individual guidance on the basis of the data during the remainder of the semester.

C. Group Self-Study Lessons

Many previous studies have shown the effect on changed pupil sociometric status by teacher or leader manipulated regroupings, aids to the isolates, and varied socialized activities in the classroom. In this study there was no one person singled out for help by the teacher alone, no cleavage readjustment was implemented by the teacher, no direct reference was made to the improvement of acceptability status. In other words, if any changes were to take place they were to be instigated and sponsored by the group. To be sure the teacher was recognized as a part of that group, but she was only one person in the group.

Regular class time was to be allowed a 7A vocal music class to recognize its identity as a group, to diagnose its group relationships, and to work toward any changes regarded as beneficial for the group. The social situation was not limited to

the confines of the vocal music classroom, for it was recognized that the girls and boys should view this approach as a new way of living. The study was expected to have its influence on all the social relationships of the girls and boys throughout the school and be carried into their community and home life.

Some of the activities to be undertaken in the study were assigned to both the experimental and the control groups, such as taking the sociometric test, reseating, and gathering data relative to the study. This time was considered equalized in the two groups. In addition the experimental group was to be permitted 10 to 15 minutes a week for their self-study project. This was to include discussion, reports of progress, and plans for activities relating to the project. The enthusiasm manifested by the pupils of the experimental group for the materials presented so far exceeded the expectations that time was extended on some days to 30 minutes. However, the topic for discussion was not formally entered in the class schedule more than one day a week, and at no time was more than 30 minutes of the class period given over to the special project.

The week-day selected for the regular discussion was Tuesday. Attendance was considered better that day. Time-allotment on Wednesdays was not certain because of school assemblies held from time to time on that day. Thursdays were periodically interrupted with certain pupils permitted to attend General Organization or Student Council meetings.

The learning experiences in this study were not only in the nature of facts and knowledge but also embraced situations definitely planned by the teacher to include emotional learning sensitized by the group experience. Certain information, attitudes and appreciations considered necessary by society to maintain itself were to be made accessible, and as acceptable as possible, to the pupils in this study. First hand and direct experiences were to be utilized as a primary source of materials. An attempt was to be made to enable the boys and girls to recognize symptomatic behavior as such and to strive to identify the true underlying causes for good and poor group relations. The problem of adjustment was to be purely a personal matter with each individual free to use the materials gained from the study in any manner which he saw fit. In a sense, then, if gains were made by this project for the individual, they could be considered the results of group therapeutic treatment.

The topics for discussion could not follow a pattern that a mental hygienist perhaps would sanction as logical, for the topics necessarily followed the school activities during the semester. But opportunity was provided for the group to systematically and consciously study its own typical reactions to specific problems and to set up procedures which would lead to more satisfactory results for the group.

The topics were handled in several different ways. One was the reading or telling of a story that dealt with the topic for consideration. After the story the pupils compared reactions and attempted to find the real truth of the situation. Sometimes the students wrote their personal reactions to a topic. These were compiled and, at the subsequent discussion period the following week, presented to the class. At other times the topic was launched through recalling personal experiences. This was followed by a discussion and an appraisal made of the group discussion. On a few occasions the topic was concluded with a group decision to act on a certain matter.

First Week. On the first day of the semester the pupils were enrolled and the age, birthday, homeroom, grade schools attended and addresses for each school year were secured. The second day the test was given to the

two groups, and on the following day the groups were re-seated. Since the first sociometric test had been given, it was time to find out whether or not the class chosen as the experimental group would be interested in a self-study project. There was still the topic to be selected. Such titles as "qualities of the worthwhile student," "how to be more popular," "how to get along well with others," "how to improve the personality," "values to live by," and "qualities of the good junior high school citizen" came to mind. All were questionable for this age youngster. Selecting the proper topic was of tremendous importance to the success of the study, for an unwise choice could defeat the project before it had a chance to get underway. The topic that was finally agreed upon, "How to Have More Friends," was evidently a fortunate choice for the approval of the idea was spontaneous. It was also found that the topic selected was broad enough to include all the others.

Knowing the names of each girl and boy in the class appealed to the group as being a prerequisite to their study, but no one could name all of his classmates. Every individual gave his name and homeroom, and a simple mixer game was played to music which required each pupil to learn the name of the child opposite him. On the last day of the week one girl and one boy could name

all but three of the forty-seven girls and boys in the group.

Second Week. Both vocal music classes elected officers the second week. The principal duties of the officers were explained in each class before the election. The president was to take charge of the class should the teacher wish assistance or be called from the room. Therefore this person should be able to direct the singers in their songs; the vice-president was to take charge in the absence of the president; the secretary would take roll daily; the treasurer would collect any money assessments for the class and take charge of ticket sales; the librarian was to see that the music books scheduled to be used by the class were available at the beginning of the class period and returned to the shelves at the end of the hour.

In addition to discussing the requirements for the offices, the experimental group spoke of the leadership qualities they expected in their officers: the ability to work well with others and to help the group carry out its plans. Dependability, regularity in attendance, businesslike, pleasantness, and like qualities were mentioned. At the close of the period the boys and girls handed in statements, written at the bottom of their music quiz papers, describing the characteristics

they liked best in other boys and girls and a list of the characteristics they liked least. These were compiled by the teacher for the following week's discussion under the headings "What I Like About Other People" and "What I Dislike in Other People."

Third Week. Of the list of 109 characteristics compiled under the title "What I Like About Other People" those with the greatest frequency were read first. These characteristics began with cheerfulness, thoughtfulness of others, neatness and cleanliness, friendliness, readiness to help others, and modesty. Heading the list of 121 characteristics compiled under the title "What I Dislike in People" was a know-it-all attitude, rudeness, selfishness, don't like other people, dirty minded, show-off, not clean, jumpy, and bad temper. The class made applicable comments to these lists of characteristics and then turned to a discussion of their effects on a group. That people were drawn together by the "do like" and separated by the "don't like" characteristics was brought out. The expectations of the class as a group participating in the forthcoming operetta were stated, and the girls and boys talked of what they wished to accomplish as a group that not one of them could achieve alone. The value of the group in a vocal music class was sensed, and ways of keeping that group working well

together were expressed. Throughout the discussion the teacher was accepted as one of the group, and the children talked freely and frankly about their part in the undertaking.

Fourth Week. The fourth week the operetta was presented to a full house. The day after the performance the pupils of both groups were given the opportunity to write how they felt they got along during the operetta in respect to the way they did their part, the adequacy of the costume they furnished, promptness, cooperation and deportment. Although it was not apparent on the stage that there was a difference in either group, on these comment papers nearly all control group pupils graded themselves higher than would have been expected--with few exceptions they gave themselves the highest possible grade. The experimental group gave themselves a more discriminative score. The words cooperation and attitude had a specific connotation to them which was obviously lacking in the control group. Their discussion of their group relationship lead them to make plans for practice in more effective group discussions and group decisions. They were interested in experimenting with the logical steps of recognizing and stating the problem and proceeding step-wise to a decision. They already recognized the fact that groups can learn to think

together more and more effectively, and that the behavior of some members of a class can hinder group operations. Those persons who get the group off the main topic, who do not express themselves clearly, who are hazy thinkers, who try to "run everything" or do all the talking were recognized as hindering the progress of the group. On the other hand, those who contributed practical and sensible ideas, who made suggestions for the next move, who questioned thoughtless comments and pointed out good qualities in a matter that was being pushed aside were considered valuable to the group.

Fifth Week. With the first marking period ended the girls and boys received new impetus to make a fresh start for the second marking period. Their goal setting was accomplished with more confidence in each other apparent. The group goals adopted were relative to improving group relations in general. They were (1) recognizing that each member of the group is important to the group and has the same right to express himself as any other person, in fact, he is expected to express himself; (2) cooperation, such as when singing keeping in time and on the right pitch, and controlling the volume properly, saying the words clearly and exactly

together, taking pride in the group's singing, showing a willingness to work cheerfully, and doing the best each one is able to do, and (3) becoming more effective in group discussion.

Sixth Week. The discussion centered around our natural desire for security or self-protection and our great desire to feel important and appreciated. This topic was held over from the fifth week when the time allotted for the project was used up in the setting of the group goals for the second marking-period.

The innate drive for self-protection was illustrated by two boys who came to the front of the room. One boy was told to strike at the other boy. The second boy dodged the blow, and the class had a good laugh before they settled down to the discovery with illustrations drawn from their science classes and observation of people and animals that all normal human beings are essentially interested in their own safety.

To illustrate the feeling of importance two girls volunteered to enact the parts of two other girls. One girl was asked to take the part of a poor girl who was faced with paying for a G. O. ticket, gym locker and towel fee, new gym suit and

tennis shoes, note book and pencils, social studies fee, and all the family's money was needed for her father's doctor bill. The second girl was to impersonate the vocal music class treasurer who was expected to collect 10¢ from the girl for the vocal music class fee. The two actors were given two minutes in the hall alone to work out their ideas. They gave the class a convincing enactment of how persons react to satisfy their need for feeling important. The treasurer ended up by giving the girl advice on how to get a baby-sitting job, and the poor girl told the treasurer many things which she did not previously know about, concerning baby-sitting.

The two basic needs were written on the blackboard. It was pointed out that these were only two of the basic drives directing our lives. But understanding that these two basic desires exist gave the pupils some insight into why people behave as they do. The children considered why a certain boy, who was described, belittled everything and everyone with whom he came in contact. They concluded that this was the only way in which he could feel important, and they made suggestions that the boy be given the opportunity to find success in some form, with the probable result that he would then be less

likely to display his maladjusted attitude. When our desire to gratify these two inner drives were in some way interfered with, the class agreed we were likely to become upset. This was natural and not to be avoided. It was pointed out that this "frustration" stimulates one toward growth and learning. We have this problem which we try to solve in the light of what we know about the world. This frustration, then, makes us more aware of our environment.

The next question was, "Can we change our personality?" The children arrived at the conclusion that one could if he wanted to badly enough, that perhaps a severe shock or extreme circumstance might make the change more rapid and effective, and that the Scrooge story, a favorite at Christmas time, was not all fiction.

Seventh Week. The Business-Industry-Education day of Lansing occurred during this week. All the teachers in the public schools were given one day as guests of a Lansing business or industry. During that day the teachers were made acquainted with one business or industry from the administration down. Knowing that this event was coming at this particular date, the topic "Responsibility" had been scheduled for this week. After the visit to the business house,

the message of employers was brought back to the school. "Teach the children to be dependable, to be persistent, and how to get along well with each other and we will make them good employees. It is assumed that the schools will teach them to read, to write effectively, and to do mathematical calculations." The children listened to the full report of the day at the business house in Lansing and then attacked the problem of how one could learn responsibility in a junior high school. They found many examples in their school work and home tasks that were pertinent to this question. Cooperation, the will to do a good piece of work, the satisfaction that comes from a task well done, and seeing a job through to its satisfactory conclusion were all part of the discussion. The topic "Dependability" brought out the idea of establishing the habit of being punctual, even in junior high school, of being reliable, honest, following instructions, and taking pains with a routine task. They found a bit of adventure in a story one boy told of an employee who was recognized at his factory for doing an extra job without being told to do it. This was labelled initiative, and was considered by the children to be an exciting addition to responsibility.

Eighth Week. The discussion was to have dealt with the way people are alike and the way people differ. This was also an appropriate time to add the necessity of knowing one's abilities and accepting them, for this factor strongly influences the happiness of junior high school young people. Recognizing individual differences was a new experience to many of them. Others were disturbed about their position in the larger social order of the junior high school, for some had come from homes where they had been overly sheltered. They were able to adjust adequately to the one-teacher and one-room elementary school situation, but to meet many new teachers and many new groups of children each day presented a perplexing new series of disturbances to what they had known as a group especially centered around them. In the discussions these particular individuals were given an opportunity to try out new personal contacts under the natural circumstances provided by their common problem. The vocal music class also gave them a common interest with these same young people they were beginning to know better, and producing a creditable and enjoyable chorus from their class became their common goal. Two pictures had been mounted attractively on colored paper and placed

together at the front of the room. One was of Dorothy Maynor and the other of Jeanette MacDonald. The 7A's did not recognize either of these singers from the pictures, but it was obvious to them that one was negro and one was white. Two recordings were played of the same song, "Depuis le jour," from the opera Louise by Charpentier. The aria is one that appeals to children of this age, and they listened intently for differences and likenesses in the performance. Then the question was raised concerning which of the two singers whose picture was displayed at the front of the room was singing which record. There was no way to base an opinion; the color of the skin made no difference in the singing voice. The children showed delight in discovering that the performances were both good and could be accepted on their own merit. A few of the more discriminative listeners were able to choose the better performance of the recording and were curious to know which singer had made the particular recording. This was something of an awakening to these pupils to discover Dorothy Maynor as the one making the somewhat more artistic performance. The likenesses in the performance were stressed, and the fundamental likenesses in all individuals were brought out. The discussion

led to the realization that all of their lives they would be meeting, working and playing with people who were like them in many respects but who also had differences. The differences sometimes caused difficulties, but they were not only natural, it was concluded, they were desirable. Differences did not necessarily mean that one individual or the other was wrong. Both might be wrong, or partially right and wrong, but there was no reason to scorn or shun one whose opinions and ways were different. Recognizing that the other person had a point of view which he had an equal right to express was a new approach to some, and a recognition of the basic principle of the democratic way of life to others. There were some pupils who brought out the idea that they had once thought they did not like certain individuals, but they found when they learned to know them better that they really were likable people. How to get along without friction when differences were discovered had to be left for a later discussion.

Ninth Week. This week the second sociometric test was given, and the children in both groups were reseated according to their choices. Not more

than two or three boys were seated together. To avoid abstraction at the communication level was one of the aims of these discussions. Some pupils, it was found, were quite verbose on certain topics. Presenting a problem was a solution, usually, to this circumstance. This one was presented on the week we had set for a discussion of prejudice:

> A boy, let us say, that all of us know, goes to one of our school basketball games. He finds that he has become lost from his gang by the passing of the crowds into the bleachers. He finds himself with people he does not know. He is expected to sit down where he is, for there is a very large crowd attending the game. One is a boy who he can see by the colored sweater he is wearing is from the rival school. On the other side is a girl, obviously Mexican, who is from a group of new arrivals at the school.

The pupils were then asked what they would do in a case like this. The discussion following was candid, and to some an awakening that they held prejudices which had gone unrecognized. The stereotype thinking was noted. The pupils tried to recall the reasons for their ideas for their sources. They were able to trace many of the reasons why they held such opinions to TV shows, radio programs, books they had read, and to what someone had told them or to past experiences. When the discussion was over many of the pupils were still seriously occupied with tracing their own generalizations. That the

pupils were in most cases viewing their own prejudices objectively for the first time was noted. That week these same pupils had an opportunity to put the principles of this lesson into actual practice. A visitor came to our school for the day and visited this particular class. She was from India and wore her native costume and her hair in long braids. The first reaction of the pupils was curiosity, but they soon found her to be a splendid person, an author and one interested in the music they were performing. The cordial and gracious reaction evidenced between the boys and girls and the lady from India will make it quite difficult for these particular students to again lump all people from India together as a vast number of foreigners with strange ways. After the lady left it was pointed out that we could not judge all the natives of India by this one lady, but that we would have to know them and recognize them for what they are individually. What we said about a whole group of people in India would be no more true than making a mass statement about all the people in our country.

Tenth Week. This week had been set aside for a discussion of the qualities that make for popularity. Our period started by reading a clipping from the local

newspaper entitled "Tips for Teens." This was a comparatively new column in the newspaper written by Elinor Williams; six of the children had already read the article. The article is headed by an attractive picture of a boy and girl in evident congenial conversation. The picture was passed around quickly and the article read:

> According to what we hear, many of you sigh for more expensive clothes, more convertibles, more television sets, more allowance, a more expensive home . . . so you'll be more popular.
>
> But would you be more popular if you had them all? Movie stars have them, but they also have troubles. Millionaires have them . . . and they have headaches, too.
>
> Besides, the way to popularity and happiness isn't through dazzling your friends and classmates with expensive possessions. Costly clothes and cars are wonderful, but think a minute. Is the best-dressed girl in your class the most popular one? Not always. Does everybody really like the boy with the longest, brightest convertible? Probably not. Is your class president the boy with the biggest allowance? Seldom.
>
> So what? So let's have a down-to-earth sense of values.
>
> What's in your personality counts more than what's in your pocket. What's in your head is more important than what's in your home.
>
> The girls and boys who are "most likely to succeed" are the ones who sharpen their wits, improve their minds and put sparkle in their personalities
>
> Try it![1]

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[1] Elinor Williams, "Tips for Teens," The Lansing State Journal, April 9, 1950, Section 1, p. 12.

There was no difficulty in getting this discussion going. The comments heard most in connection with popularity centered around the traits of friendliness, a sense of humor and willingness to do things that others wanted to do. Even in these youngsters the importance of consideration for others and kindness toward everyone was not underestimated. They mentioned observing that boys and girls with good looks and lots of pep had the best chance to be popular, but that if one were not pretty, he could at least be clean and neatly dressed. One who was not naturally bouncing with energy might still be popular by treating others thoughtfully, showing an interest and genuine enthusiasm for what others were doing, and giving everyone a kindly smile. The popular person, they brought out, would find more value in knowing the person for what he was than for what he wore or who his parents were or what his family owned. This popular person would be a great deal like the other people who liked him, and he would feel that what the group thought was important was usually to be accepted, but not accepted blindly. This popular person likely looked on the world as being a fine place in which to live, filled with kind, pleasant, and friendly people. Besides being reasonable, he would

be hopeful for the best in all situations and from all people. The individuals in the group made suggestions of what they were going to try in an attempt to see more of what popularity really was.

Eleventh Week. This was another week devoted to a discussion of how the group had progressed in their group feeling and to set goals for the next marking period. Certain thoughtless behavior was mentioned by members of the group as, while improved, still a problem defeating the best functioning of the group. Without names mentioned the behavior was described which was irritating to the group. First, was the aggressive person who wanted his reactions heard first and who was overly-confident that he was always right. Then, the submissive individual was mentioned, the one who agreed to anything, who never thought for himself, but thought he had to wait to be told what to do and what to say before he could say it. Another behavior that the class recognized as harmful was the one arising from exaggerated fear for oneself, one's security, property, ideas, and reputation. This was the self-centered and selfish type of individual. The goals set were in keeping with recognizing this as behavior and although it was to be rejected, the individual possessing the unfortunate behavior

characteristic was still likely, it was admitted to have many valuable qualities which would make him an asset to the group. He was then to be accepted as a person, and only his actions to be rejected. The individuals in the group were conscious of progress in working together on music and in their attack of all issues which arose. There was some complaint about not having freedom enough, such as the privilege of taking trips during class time and changing their lunch hour. But this was recognized as not unreasonable when the entire school was considered. Thus, the members of the group were attempting to enlarge their vision of their relationship to the school as a whole.

Twelfth Week. This week was devoted to the consideration of a combination of emotions and moods as they affect people. The pupils made a list of the emotions that they knew on the blackboard: fear, anger, joy, sadness, worry, jealousy, hate, love, pride, and disgust. The children brought out how these emotions were sometimes so strong that they made people do queer things. They recalled incidents when they had felt these emotions strongly, and they were able to tell what they did in some cases. A few of the children were able to laugh at themselves and tell what they thought they should have done. It was accepted by the group that they were

going to try to recognize these emotions and see if they could stop and think about them and steer themselves through the time that the emotion had seeming control. They recognized that this would take considerable practice and that if they gave way to these emotions and let them take charge of their actions that they were not to give up but to try to meet the next emotional uprising squarely.

A connection was made between the moods resulting from emotions and moods in music. Parts of four recordings were played for the two classes in this study: "Andante Cantabile" by Tschaikowsky, "Pacific 231" by Honegger, "Pomp and Circumstance March No. 1" by Elgar, and "The Afternoon of a Faun" by Debussy. The children wrote of the moods they felt from hearing the music. It was made evident that these great composers were not trying to describe objects in their music, but to represent in sound the feelings they had under certain circumstances. The children were given the titles of the recordings after they had heard them.

Thirteenth Week. The discussion of jealousy and envy was scheduled. The dictionary definitions were presented to the class. Jealousy was the emotion which arose when one felt insecure or suspicious of others taking what one has or has had. Envy was the emotion

aroused by wanting what other people had or being discontented over the success or good fortune of others. These two--jealousy and envy--are the source of a great deal of unhappiness in junior high school pupils. The following story was told.

> A girl popular with everyone in her own school enrolled in a new junior high school. She could not understand her lack of popularity in the new school. No one gave her attention or seemed to notice her. At every opportunity she spoke unkindly of the school and all the people in it. Instead of making an effort to keep up her usual neat appearance, she gradually became more slovenly in her manner of dressing and her posture. If her classmates tried to smile at her, she usually tossed her head and went rapidly away from them. She flared up and snapped at anyone who spoke to her. It wasn't long before people knew better than to speak to her. They felt the less they had to do with this girl the better. What do you think was this girl's real trouble?

The class was able to take this story apart and show the girl's feeling of insecurity and how she turned to jealousy and envy instead of recognizing the reality of the situation. This story was understood quite well by some people who had been disturbed by transferring from the grade school, where they were popular and well-known, to the large junior high school, where they were required to make a new place for themselves. The girl of the story, they pointed out, was self-centered, and she was not able to think of anything or anyone but herself. Now if she could have looked at the situation honestly, she would have realized that the situation was

waiting for her, the same as everyone else, that she could be kind and cheerful and be the kind of person other people liked. Her viewpoint needed changing, one pupil offered. Everything that she recognized the popular people of this school having, she could remember having had in the other school, and she was jealous.

People who are jealous or envious can be very rude and cruel to others, some one mentioned. But a normal boy or girl will recognize his abilities for what they are, and he will be able to recognize his own strong points and to admit wherein others are superior to him. To recognize the superior ability of others, and to give them credit for it, marks the quality of a truly fine individual. This is a particularly difficult idea to act upon, especially for the children coming from homes where they have been told that they are a little better than the rest of the people in the neighborhood.

That one needed to be aware of his own powers and limitations, those that he has inherited, and attempt to do well those things that he was capable of doing was brought out. One could be so overly ambitious that he might make life a hardship and a series of tensions, or he could be so lacking in aspiration that he failed to contribute anything to the world in which he lived. This topic might seem far from the original one, but

the pupils saw the connection between one's accepting situations and one's self for their true worth rather than in the light of fanciful imagination. In this setting jealousy and envy could be reckoned with.

One student expressed the idea that it was how you thought about what you had and what you did or what you knew that made you happy or unhappy. It was one's ideas about things and people that had to be watched and controlled.

Fourteenth Week. Another appropriate "Tips for Teens" article appeared in the newspaper in time for the discussion of making and keeping friends. The following article, which had not been noticed in the paper by the entire class, was read:

> There's nothing wrong with a shiny new convertible, a closetful of georgeous clothes or a beautiful house with a tennis court and a spacious fun room. Far from it. If you have them, that's a wonderful break for you.
>
> But don't let it get you. Take your head out of the clouds and don't judge yourself, your friends and classmates by what they have or have not. If you do, you're a snob, and you've no right to be, because you were merely born lucky. Your family is responsible for your good luck; you had nothing to do with it personally, so it reflects no glory on you.
>
> If you choose your friends because they have cars or nice homes, you're missing the pleasure that comes from knowing boys and girls who are fun no matter how much money is in their--and your--pockets.

> Don't forget that there's reason for everything. The girl who sits beside you in English class doesn't wear shabby clothes because she likes to. She does it because her mother is a widow and if the family economizes, her brother can stay in school a little longer. If you were in her place, would you want to be snubbed and left out because your clothes weren't new?
>
> If you're a real, sincere person, you won't judge other people by their possessions . . . the size of their homes, the cost of their clothes, the kind of cars they drive.
>
> You'll like them for themselves and the fun you have together, remembering that it's personality that counts . . . the kind of person you are and they are. You have to be a friend to have friends.[2]

Another short story was told about four girls who spoke only to the girls in their little group. Suggestions and ideas in keeping with this topic were not lacking. It was recognized that people needed friends. How they got along with their friends was very important to the happiness of both, and getting along could be practiced. What a lack of friends within the group leads to was discussed. The children went back to the need of feeling secure and that having friends contributes to this. If a person felt insecure, he might show off to get attention. One who could not make friends might make poor marks in school, but sometimes if one had congenial friends his work went along with confidence and his marks improved.

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[2] Elinor Williams, "Tips for Teens," The Lansing State Journal, May 7, 1950, Section 1, p. 10.

The discussion closed with the group decision to try to have more friends both inside and outside of class by practicing friendliness.

Fifteenth Week. This was the last period for setting new goals for the group. This time improving personality traits, posture, recognizing temper and curbing it, working cooperatively and harmoniously together, and recognizing that group activities might be difficult for some individuals were offered. The last-named goal was directed toward encouragement and recognition for the pupil who got discouraged. The suggestion was made that others might help this one individual see his own strengths and weaknesses, so that he would be better able to understand and accept himself. It must be continually explained to this person that there is no perfection in ordinary people, and that too much success is not good for one. One might grow with failures, sometimes more than with success. The comment that it was fun to help others was made.

The session closed with a remark to the effect that pleasing personalities were not spectacular in the group, but that their effect was felt. The pupils concluded that this feeling of pleasantness leads to heppiness and contentment which were much more desirable than being conspicuous in the group. A report was made

by a committee of pupils who had been observing the rest of the class during the discussion period. There were only five students who did not make a verbal remark during the discussion period. This was in contrast with five who did most of the talking during the first class discussion. Everyone reported showing an interest in the discussion period, and no particularly offensive behavior was noted during this time.

Sixteenth Week. Two sociometric tests were given during this week to both the experimental and control groups. The first one was the same as the two previous sociometric tests. The last one called for a choice of persons in the group with whom the individual wished to sing on the final examination.

Nineteenth Week. On the back of the final examination paper the pupils in the experimental group were asked to write the answers to three questions. (1) Was the project on "How to Have More Friends" worthwhile to you personally? (2) In what other classes were matters such as we discussed here mentioned, and what was the nature of the discussion in these other classes? (3) Would you recommend that other vocal music classes have a study like the one we had this semester?

The complete schedule as it was followed during the semester is given in Table X.

TABLE X

FINAL SCHEDULE FOR GROUP SELF-STUDY OF 7A VOCAL MUSIC CLASS, SECOND SEMESTER, 1950

Week	Date	Event
1	1/30	Semester begins. Class roll taken, age, birthday, homeroom, elementary school attended and change in addresses. Sociometric test made.
	1/31	Sociometric test given.
	2/1	Reseating of classes according to sociometric choices. *Group self-study project introduced. Learning names.
2	2/6	*Desirable qualification of class officers. Write of what is liked and disliked in others.
	2/7	Election of class officers.
3	2/14	*Group activities associated with operetta participation. *Discussion of "What I Like About Others" and "What I Dislike in Others" lists.
4	2/21	Operetta presented.
	2/22	*Evaluation of cooperation, successes in group activities in connection with operetta and points to be improved.
5	2/28	*Setting group goals for marking period.
6	3/7	*Discussion of inner human needs, and possibility of personality change.
7	3/13	Secure from office cards: intelligence scores, scholastic average, occupation of parent, school last attended.

TABLE X (Continued)

Week	Date	Event
	3/14	B. I. E. Day. School in recess.
	3/15	B. I. E. Day report. Questionnaire on parent's occupation, vocational aspirations. *Discussion of responsibility, persistence, and dependability.
8	3/21	Second sociometric test.
	3/22	Reseating according to choices. *Discussion of differences and likenesses in people, the acceptance of one's abilities.
9	3/28	*Discussion of prejudice, fact and fiction.
	3/31	Easter recess begins. School reopens April 10.
10	4/11	*"Tips for Teens" from Lansing State Journal, 4/9/50. *Traits that make for popularity.
11	4/18	*Evaluation of group goals for past marking period. Set new goals for coming marking period.
12	4/25	Moods in music. *Discussion of emotions and moods.
13	5/2	*Discussion of jealousy and envy.
14	5/9	*"Tips for Teens" from Lansing State Journal, 5/7/50. *Discussion of making and keeping friends.
15	5/16	*Evaluation of group activities for past marking period. Set new goals for coming marking period.
16	5/23	Third sociometric test.
	5/24	Reseating on basis of sociometric choices.

TABLE X (Continued)

Week	Date	Event
	5/26	Sociometric test on whom to sing with in final examination.
18	6/6	Final vocal examination using sociometric choices.
19	6/12	*Evaluation on final examination: Was the project worthwhile? Other classes covering same discussions? Recommendations for future classes.

* These items marked with an asterisk concerned the experimental group only.

D. Summary

The administration of the four sociometric tests to the experimental group and the control group during the semester has been discussed. The remainder of the chapter has been devoted to the procedures used in the group self-study project. The group self-study material is necessarily presented at a language level consistent with the interests of the children in the experimental group.

CHAPTER V

INTERPRETATION OF FINDINGS

A. Introduction

A compilation of the data will be presented in this chapter. The raw data will be presented in matrix form and an interpretation of its use will be made. Computations will be presented in forms of per cents, means and standard deviations to show relative trends of pupil reactions found in various tests administered to the experimental and control groups. Correlations in terms of the Pearson product-moment will be presented in tabular form to show retributive relationships between sociometric scores given by and received by pupils. Further correlations will be shown for the reactions of the pupils on the pre-test and final test for both groups and conclusions will be drawn. The differences found in the two groups, determined by the covariance technique, will be presented in tabular form and the findings explained. A comparison of the data of the third and fourth sociometric tests will be made through correlations of the various reactions. Finally, certain intercorrelations of factors held constant and the acceptability scores of the experimental and control group will be presented and interpreted.

The last part of the chapter will be devoted to a report of the group self-study project in the form of direct quotations from children and observations made by the teacher.

B. The Sociometric Ratings of the Groups

The raw data from the sociometric tests was compiled at the close of the semester after the group self-study project was finished. Four tests had been administered to the experimental group and four to the control group. The raw data were taken from each of the pupil's sociometric tests and transcribed to a matrix. The second sociometric test was given March 21, mid-way between the pre-test and final test. Because the data for the second sociometric test merely showed mid-term trends, they will only be mentioned in the findings.

The Matrix. The data from each sociometric test are presented on a square matrix. The first or pre-test, third or final test, and fourth or sociometric test with the question concerning the singing choices for the experimental group are given in this order as Tables XI, XII, and XV. The matrices presenting the sociometric data for the same tests, respectively, for the control group are given as Tables XIII, XIV, and XVI.

TABLE XI

SOCIOMETRIC DATA OF EXPERIMENTAL GROUP ON FIRST SOCIOMETRIC TEST, JANUARY 31, 1950, INDICATING EACH PUPIL'S ATTITUDE TOWARD OTHERS IN HIS CLASS (AT) AND THE ACCEPTABILITY OF EACH PUPIL BY HIS CLASSMATES (AC)*

	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	EAA	EBB	ECC	EDD	EEE	EFF	EGG	EHH	EII	EJJ	EKK	ELL	EMM	ENN	EOO	EPP	EQQ	ERR	ESS	ETT	EUU	RS	Totals		
																																																	CS	?G	AT
EA		?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	3	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	3	0	2	44	6
EB	?		-	-	-	2	-	?	2	1	-	2	2	?	1	?	?	-	?	?	?	?	2	-	?	3	-	1	?	?	2	2	2	?	3	?		3	?	?	-	?	1	?	?	?	?	10	15	21	[illegible]
EC	?	-		?	3	1	1	2	1	1	3	1	1	1	1	?	?	?	?	?	1	?	2	1	1	1	3	2	1	1	2	2	1	1	1	1	1	1	1	?	1	2	?	1	1	2	?	1	34	11	46
ED	?	-	?		?	-	2	2	-	-	?	?	?	?	?	?	3	3	3	?	?	?	?	?	?	?	?	?	?	?	?	?	?	-	?	2	?	?	?	2	?	?	2	-	-	?	2	7	9	30	14
EE	?	-	2	-		-	1	2	-	1	3	?	3	?	1	?	?	?	?	?	?	?	2	2	?	-	?	?	?	?	2	1	?	?	?	-	-	2	2	?	-	1	3	?	1	2	?	8	17	21	25
EF	?	1	3	1	2		1	1	2	1	2	?	?	?	1	?	1	1	1	?	2	?	3	2	1	1	2	1	1	3	?	1	1	-	1	1	?	2	1	-	?	1	2	1	1	1	-	3	33	10	44
EG	2	1	1	1	1	1		1	1	-	2	1	1	1	1	1	1	2	1	1	1	1	2	2	1	2	1	1	1	1	1	1	1	3	1	1	1	3	2	1	1	1	3	2	1	1	-	2	44	0	56
EH	?	-	2	-	2	?	2		-	1	3	-	-	?	1	?	?	?	?	2	?	1	1	2	?	?	?	1	1	1	2	1	3	-	?	1	1	2	?	?	1	-	3	?	?	?	-	8	21	17	26
EI	?	3	?	-	1	-	1	2		1	3	1	-	?	-	1	1	3	1	1	?	?	?	1	?	?	?	2	?	1	1	?	2	1	1	2	2	-	2	1	-	?	2	1	1	?	1	6	27	13	34
EJ	?	-	1	?	2	?	2	1	1		2	3	3	2	2	?	?	?	?	?	?	-	1	2	1	1	1	1	?	2	2	1	?	2	-	?	?	?	?	?	?	1	1	?	1	2	1	3	25	18	36
EK	?	-	2	?	3	?	1	2	-	1		?	3	-	2	-	?	?	?	?	?	?	2	1	1	1	1	1	?	2	1	1	2	1	-	?	-	1	2	?	1	-	3	1	1	2	-	8	25	13	31
EL	?	?	2	?	?	?	?	2	-	3	?		3	3	2	-	?	?	?	?	?	-	2	?	2	?	2	1	?	2	1	?	?	?	1	?	?	?	?	?	?	?	?	1	?	?	-	4	14	28	23
EM	?	-	2	?	3	?	2	1	-	2	3	1		-	?	1	?	-	-	1	?	1	3	?	1	?	1	1	?	2	1	?	2	?	-	1	?	?	?	?	1	2	1	2	1	2	-	7	24	15	31
EN	?	1	1	?	1	2	1	2	1	2	1	2	1		1	1	1	1	1	?	2	?	?	1	3	1	1	-	1	1	-	1	1	2	1	1	1	1	1	1	1	1	?	3	2	1	2	2	38	6	40
EO	?	1	3	?	1	?	2	2	-	3	2	3	1	?		?	?	?	?	?	?	?	1	?	1	2	1	2	1	?	?	1	1	-	2	1	?	2	1	?	?	?	?	1	1	2	1	2	25	19	37
EP	2	?	?	?	?	?	2	2	?	2	2	?	3	2	?		2	-	?	1	?	?	?	?	?	?	1	?	?	?	?	?	?	?	?	?	?	?	1	1	?	?	3	?	?	?	2	1	14	31	25
EQ	2	?	?	3	?	?	2	?	1	?	?	?	?	?	?	2		2	3	3	?	?	2	1	?	?	?	?	1	?	?	?	1	?	?	?	?	1	1	2	?	?	2	?	1	?	2	0	18	28	32
ER	?	?	?	2	?	2	-	?	?	?	?	?	?	?	?	?	2		2	-	?	?	2	-	?	?	?	2	?	?	?	?	?	?	?	?	?	3	3	?	?	?	3	2	2	?	-	4	11	31	21
ES	2	?	?	2	?	-	1	-	-	?	?	?	1	?	?	1	2	3		3	?	?	?	?	?	?	?	1	2	?	?	?	?	?	?	1	?	1	1	2	?	?	3	-	1	?	2	4	17	25	25
ET	?	?	2	?	?	?	2	?	?	?	?	?	?	?	?	?	2	2	3		?	?	2	?	?	?	2	?	?	?	2	?	?	?	?	?	?	?	?	?	?	?	3	?	?	?	2	0	16	30	22
EU	?	2	1	1	1	2	1	1	1	1	2	1	1	1	1	?	1	1	1	1		1	1	3	1	1	2	1	1	2	1	2	1	1	2	1	1	2	1	1	3	1	3	1	1	1	1	0	44	2	56
EV	?	?	?	?	1	2	3	-	-	3	1	?	2	-	-	?	?	?	1	-	1		?	2	?	?	-	?	1	-	?	2	?	?	?	?	?	-	-	-	-	2	3	1	?	1	-	12	16	18	14
EW	?	1	2	?	3	1	2	1	?	?	3	1	3	1	1	?	?	?	1	1	1	?		1	1	1	2	2	?	?	1	2	?	1	1	1	1	2	1	?	1	1	1	1	2	2	?	0	33	13	47
EX	?	1	2	-	3	?	2	2	-	1	2	?	?	?	-	?	-	1	1	?	?	?	1		?	-	?	?	1	1	1	2	3	1	-	1	3	1	2	?	2	2	1	1	1	1	-	7	26	13	33
EY	?	?	1	?	1	?	2	3	?	1	2	1	2	1	?	2	?	?	?	1	?	1	2	?		1	1	1	1	3	2	1	1	1	1	1	?	1	1	?	1	1	3	2	1	1	?	0	32	14	45
EZ	?	2	2	1	2	1	3	1	1	1	2	1	1	1	1	?	1	-	?	?	1	?	2	1	2		1	1	3	3	1	1	2	1	1	1	1	1	1	?	1	2	1	1	1	1	-	2	38	6	[illegible]
EAA	?	-	2	?	1	1	1	1	-	-	2	1	1	2	-	1	-	?	-	1	2	-	2	?	2	-		3	1	2	3	1	2	-	1	1	?	1	1	-	1	?	1	1	1	3	?	10	29	7	33
EBB	?	-	2	-	1	1	-	1	-	-	3	-	3	-	1	-	-	1	-	-	-	?	3	-	1	-	2		1	1	1	1	2	-	2	-	1	2	2	-	2	?	1	1	2	1	-	18	25	3	[illegible]
ECC	?	-	1	-	2	1	2	1	1	1	1	?	?	-	1	?	1	1	1	-	2	-	2	1	1	1	1	1		3	1	1	3	1	1	1	1	1	3	1	2	?	2	1	1	?	1	5	35	6	42
EDD	?	?	2	?	?	1	?	1	1	1	1	-	1	1	?	1	?	?	1	?	?	1	?	?	3	-	-	1	2		1	?	1	2	?	?	1	2	?	?	?	2	3	3	?	2	?	3	23	20	32
EEE	?	-	2	-	1	?	1	2	-	-	2	-	2	-	1	?	?	-	?	-	?	1	1	1	1	-	3	1	1	2		2	2	-	1	?	1	2	1	-	1	1	1	3	1	3	1	11	28	7	31
EFF	?	2	2	?	2	1	1	1	?	2	2	?	?	?	1	?	?	?	?	?	?	?	1	1	?	-	2	2	1	?	3		1	1	3	1	2	3	?	?	1	1	-	?	?	1	?	2	24	20	36
EGG	?	1	1	-	?	-	2	3	-	1	2	?	1	?	-	?	1	1	1	1	?	?	-	3	1	1	2	3	1	2	2	2		-	1	1	1	1	2	?	1	1	2	1	1	?	-	7	30	9	37
EHH	?	?	1	2	?	1	3	2	1	3	2	?	?	?	?	?	?	?	?	?	?	?	?	1	1	1	-	?	?	?	?	1	?		1	2	?	3	1	?	1	1	2	2	1	?	1	1	22	23	33
EII	?	1	1	-	?	1	1	1	1	1	1	1	1	1	1	-	-	-	?	-	1	1	1	1	2	1	2	3	1	?	?	2	3	1		2	?	3	1	?	2	1	-	2	1	1	-	7	32	7	37
EJJ	?	?	?	1	?	1	?	2	-	?	1	?	?	?	-	?	2	2	?	1	?	?	2	-	1	1	2	?	?	?	?	1	3	-	3		?	1	?	?	?	?	3	1	2	?	2	4	19	23	26
EKK	?	-	-	?	-	?	2	2	2	?	2	?	?	?	?	?	?	?	?	?	?	?	-	3	?	-	?	1	?	?	2	3	?	?	?	?		-	?	?	2	3	-	?	2	-	?	8	11	27	16
ELL	?	1	1	1	2	1	2	2	1	1	2	?	?	1	1	?	1	1	1	?	1	?	2	1	1	1	3	3	1	1	1	1	1	2	3	1	1		1	?	1	2	1	1	2	1	?	0	38	8	52
EMM	?	-	1	-	2	-	2	1	-	-	2	?	1	?	-	?	-	1	-	?	1	-	-	1	-	-	-	1	3	?	2	1	2	-	1	-	-	1		-	3	2	3	2	1	2	-	18	22	6	16
ENN	?	?	?	2	1	?	?	1	?	?	1	?	?	1	?	1	3	2	2	2	?	?	2	1	?	2	?	1	?	1	?	1	?	?	1	?	?	3	1		?	?	2	1	?	1	3	0	23	23	36
EOO	?	?	1	-	2	?	1	2	?	1	2	?	?	?	2	1	?	?	?	?	2	?	2	2	2	-	1	?	2	?	2	1	?	?	?	?	1	2	2	-		1	1	2	1	1	-	4	24	18	33
EPP	1	1	2	1	1	?	2	-	-	1	2	?	3	?	?	1	1	?	1	2	?	?	1	1	1	1	?	1	?	2	1	1	?	-	?	?	1	3	2	-	3		1	2	1	1	-	5	29	12	37
EQQ	1	?	1	-	2	?	2	?	-	-	2	?	?	?	?	?	-	2	3	3	?	2	2	2	?	-	2	2	1	2	1	?	1	-	-	?	1	1	?	+	1	?		-	1	?	1	9	22	15	27
ERR	?	?	1	-	1	1	1	1	1	1	1	1	2	1	1	-	-	1	1	?	?	1	1	1	3	?	1	1	1	3	2	1	?	1	1	1	1	1	3	?	2	2	2		2	2	1	3	36	7	46
ESS	?	1	3	1	2	1	1	1	-	2	2	?	2	-	-	?	1	1	1	?	1	?	3	1	-	-	1	1	1	1	?	2	2	-	2	1	2	1	2	1	1	1	2	1		1	1	6	34	6	42
ETT	?	-	2	?	3	?	?	1	?	?	3	-	2	-	?	?	?	?	?	1	?	?	2	1	1	-	2	?	?	2	3	1	?	?	-	?	1	1	2	-	1	2	1	2	1		-	7	21	18	26
EUU	3	1	1	2	1	1	2	2	1	1	1	1	1	1	-	1	-	1	-	2	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	3		3	43	0	53
RD	0	14	2	14	2	6	3	3	19	7	1	5	2	8	9	5	8	6	5	6	1	5	3	4	2	13	5	1	0	1	1	0	0	13	6	3	4	3	1	10	4	2	3	3	1	1	17	232			
CN	7	16	34	14	31	21	37	37	17	29	38	16	28	16	21	13	18	21	22	18	15	11	34	31	27	20	29	33	27	27	31	34	20	18	22	25	23	36	32	11	28	27	38	33	35	26	19		[illegible]		
?R	39	10	10	18	13	19	6	[illegible]	10	10	7	25	16	22	16	20	20	19	19	22	30	30	9	11	17	13	12	12	15	10	14	12	18	15	14	10	19	7	13	25	14	17	5	10	10	16	10			[illegible]	
AC	13	7	54	7	52	20	59	55	1	35	74	17	49	13	16	10	19	27	29	22	19	7	30	41	37	13	42	47	35	37	42	49	48	11	32	22	24	29	38	4	38	36	15	48	42	44	13				1564

* Each row across the matrix represents a pupil's attitude toward every other individual in the class. His total Attitude Score appears at the extreme right hand side of the matrix in the column headed AT. Each column on the matrix represents a pupil's Acceptability (AC) by the other members of the class, and the total AC scores appear in the bottom row. Individual acceptability scores range from 1 to 3 with the latter the highest acceptability rating. The non-acceptability rating is represented by a - (minus sign). The ?'s represent classmates whom the pupil did not know well enough to reject or accept. In the totals in the columns at the right of the matrix, RS represents the total number of rejections given; RD at the bottom of the matrix represents the total number of rejections received. CS at the right indicates the number of classmates chosen; CN at the bottom represents the number of classmates who have chosen the particular individual indicated at the top of the column. The total number of ?'s given is designated at the right side of the matrix under ?G; the total number of ?'s received is indicated at the bottom of the matrix as ?R. The AT score is the total of the numbers in its row minus the number of rejections in the same row. The AC score is the total of the numbers in each column minus the total number of rejections received.

TABLE XII

SOCIOMETRIC DATA OF EXPERIMENTAL GROUP ON THIRD SOCIOMETRIC TEST, MAY 23, 1950,
INDICATING EACH PUPIL'S ATTITUDE TOWARD OTHERS IN HIS CLASS (AT) AND
THE ACCEPTABILITY OF EACH PUPIL BY HIS CLASSMATES (AC)*

	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	EAA	EBB	ECC	EDD	EEE	EFF	EGG	EHH	EII	EJJ	EKK	ELL	EMM	ENN	EOO	EPP	EQQ	ERR	ESS	ETT	EUU	RS	Totals CS	Totals TO	AT
EA		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	3	0	46	0	53
EB	1		2	1	2	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	3	2	1	1	2	1	1	1	1	3	1	1	3	1	1	1	1	1	1	2	1	1	0	46	0	60
EC	1	1		?	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	3	1	1	1	3	3	1	2	2	2	1	1	1	1	1	2	1	?	1	1	1	1	1	2	1	0	44	2	56
ED	2	1	1		2	-	2	2	1	1	1	1	1	1	1	2	3	3	2	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	2	1	1	1	2	2	44	0	56
EE	1	2	3	-		-	1	2	-	1	3	1	2	1	1	1	1	1	-	1	1	1	2	1	1	-	1	2	1	2	1	1	2	-	1	1	1	2	1	-	1	1	3	1	1	1	1	7	39	0	46
EF	1	1	3	2	2		-	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	2	2	2	3	1	-	1	1	1	2	1	1	1	1	2	1	2	1	-	3	43	0	54
EG	1	2	1	1	1	1		2	-	1	2	1	2	1	1	-	1	1	1	1	1	-	1	1	1	3	2	1	1	2	1	1	2	-	3	1	1	2	1	1	1	1	3	1	1	1	-	5	41	0	50
EH	-	1	2	-	2	-	2		-	2	3	-	-	-	1	-	-	-	-	-	-	?	1	1	-	1	2	2	1	3	1	1	3	-	-	1	1	1	-	-	-	-	-	1	1	-	-	23	22	1	11
EI	-	1	3	-	2	1	1	1		1	1	1	1	2	1	-	1	1	1	-	2	1	1	1	1	1	3	3	1	1	1	2	1	-	2	1	1	2	1	1	2	1	1	2	1	1	-	6	40	0	46
EJ	1	2	1	1	1	1	2	2	1		1	3	2	1	3	1	1	1	1	1	1	1	1	1	-	1	1	1	2	2	1	3	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	1	45	0	56
EK	1	1	3	-	3	-	1	2	-	1		1	2	1	1	1	1	1	-	1	1	-	2	-	1	1	1	2	1	2	1	1	2	-	1	1	1	2	1	-	1	1	3	1	1	2	-	9	37	0	42
EL	1	1	2	1	1	1	-	2	1	3	3		2	2	3	1	?	?	?	?	1	1	1	1	2	1	1	2	1	1	2	1	1	-	1	1	1	1	-	?	-	1	1	-	-	2	1	6	35	5	43
EM	1	1	2	1	3	1	1	2	1	2	3	3		1	2	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1	2	1	1	1	-	-	2	1	2	1	2	-	5	41	0	50
EN	1	1	1	1	1	1	1	2	1	1	1	2	1		1	1	1	2	1	1	3	1	-	1	2	3	1	2	1	1	1	1	1	2	2	1	1	1	1	1	2	1	1	1	1	1	3	1	45	0	58
EO	?	3	2	-	2	1	1	2	1	3	3	1	1	1		1	1	-	-	1	1	1	2	1	1	1	2	2	1	2	1	1	1	1	1	1	1	2	1	?	1	1	1	1	1	1	1	3	41	2	52
EP	2	?	?	1	1	1	2	1	1	1	1	1	1	1	1		3	3	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	2	1	2	2	-	1	-	2	42	2	54
EQ	2	1	1	3	1	1	2	1	1	1	1	?	?	?	1	2		2	3	2	1	1	1	1	1	1	1	1	1	1	?	1	1	1	1	1	1	1	2	2	1	1	2	1	1	1	3	0	42	4	56
ER	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	3	1		1	-	1	1	2	1	1	1	1	2	1	2	1	1	1	2	1	1	2	2	1	1	1	1	2	1	1	3	-	2	44	0	55
ES	2	1	1	2	1	-	2	2	-	-	1	?	1	-	-	2	3	3		2	?	-	1	1	1	-	1	-	1	1	1	1	1	-	1	1	?	1	1	2	1	1	3	1	1	1	2	9	34	3	39
ET	2	1	1	1	3	1	-	1	-	1	3	-	1	1	1	-	2	1	2		1	?	1	1	1	1	1	1	1	2	2	-	2	-	1	1	1	1	2	-	1	1	3	-	-	2	-	10	35	1	39
EU	1	1	3	1	2	3	1	2	1	1	2	1	1	1	1	1	1	1	1	1		1	2	1	1	1	2	2	1	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	2	2	1	0	46	0	60
EV	-	-	-	-	?	?	-	2	-	-	-	2	1	2	2	-	-	-	-	-	1		-	1	1	1	?	1	2	1	2	-	-	-	2	-	?	1	3	-	3	3	-	?	2	-	-	22	19	5	11
EW	?	1	3	?	2	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1		1	1	1	3	3	1	2	2	1	2	1	1	1	1	1	1	?	1	1	1	1	2	2	1	0	43	3	57
EX	-	1	1	-	1	1	2	2	-	2	1	1	1	1	1	?	1	1	1	1	1	1	1		1	-	1	3	1	2	2	1	3	-	1	1	3	2	1	1	2	1	2	-	1	1	1	6	39	1	47
EY	1	1	1	1	1	1	2	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1		1	2	2	1	3	3	1	1	1	2	1	1	2	1	1	1	1	2	1	2	1	1	0	46	0	60
EZ	1	3	1	-	1	1	3	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2		1	1	2	2	1	1	2	1	1	1	3	2	1	1	1	2	2	1	1	1	1	1	45	0	56
EAA	1	1	2	-	2	1	1	1	-	-	2	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1		3	1	2	1	1	3	1	2	1	1	2	1	-	1	1	1	1	2	2	1	4	42	0	52
EBB	-	-	2	-	2	1	2	1	1	1	2	1	1	1	1	-	1	1	1	1	1	1	3	-	1	-	3		1	2	1	1	3	1	1	2	1	2	1	-	1	1	1	1	2	1	1	7	39	0	46
ECC	1	1	1	-	1	2	2	1	1	2	2	-	2	1	2	-	2	-	1	2	1	-	1	1	1	-	1	1		3	1	-	1	-	1	1	1	1	3	1	1	1	3	1	1	1	1	8	38	0	44
EDD	-	1	1	-	1	1	2	2	-	1	2	?	1	1	1	-	-	-	?	-	1	?	1	1	3	-	1	2	1		3	1	2	-	1	1	1	1	2	-	1	2	2	3	1	1	-	11	32	3	35
EEE	-	1	2	-	1	1	1	2	-	1	2	-	1	1	1	-	-	-	?	-	1	1	2	1	1	-	1	2	1	3		1	3	-	1	1	1	1	1	-	-	1	2	2	2	3	-	13	32	1	33
EFF	?	2	1	1	2	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	1	3	3		1	1	2	1	1	1	1	?	1	1	1	1	2	2	1	0	44	2	58
EGG	1	1	1	1	2	1	1	2	-	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	1	-	3	3	2	3	2	1		1	1	1	1	1	1	1	1	1	1	1	1	1	-	3	43	0	54
EHH	?	1	2	1	1	1	3	2	1	1	1	1	-	1	1	1	?	?	?	1	1	2	2	1	1	1	2	2	2	2	1	1	1		1	1	1	2	1	1	3	1	1	1	1	2	1	1	41	4	54
EII	1	3	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	3	3	1	1	1	1	2	2	1		2	1	2	1	1	2	1	1	1	1	1	1	0	46	0	60
EJJ	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	2	1	2	2	1	1	1	1	1	1	2	1	2	1	1	1	1		3	1	1	1	3	1	3	1	2	1	1	0	46	0	60
EKK	?	1	-	?	1	1	1	2	1	1	1	?	1	1	1	?	?	-	-	-	1	?	1	2	1	3	?	1	1	2	3	2	2	1	1	2		1	2	?	2	3	-	-	1	1	-	7	31	8	30
ELL	1	2	2	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	2	1	2	1	3	3	1	1	1	1	3	1	2	1	1		1	1	1	1	1	1	1	1	1	0	46	0	60
EMM	-	1	1	-	2	-	2	1	?	-	2	-	2	1	1	-	-	-	-	2	1	1	-	1	-	-	-	1	2	3	1	1	-	-	-	-	-	2		-	3	3	2	-	1	1	-	21	24	1	17
ENN	2	-	-	3	2	-	-	-	-	-	-	-	-	-	-	2	3	2	2	3	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	1	-		-	-	1	-	-	2	2	32	14	0	5
EOO	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	2	2	1	2	1	1	1	1	1	1	-	1	1	2	1	1	1	1	-	1	3	1	2	3	1		3	1	2	1	1	1	2	44	0	56
EPP	1	1	1	-	1	1	2	2	-	1	1	?	2	1	-	1	-	1	-	-	-	1	1	-	1	2	1	1	1	3	2	1	1	-	1	1	2	2	3	-	3		2	-	1	1	-	12	33	1	35
EQQ	1	-	?	-	3	?	2	1	-	2	3	?	-	?	?	1	-	2	2	3	1	?	1	1	1	-	?	1	1	2	1	1	2	1	1	1	1	2	1	-	?	1		-	1	1	2	8	30	8	36
ERR	-	1	1	-	1	1	1	-	1	1	2	1	1	1	1	?	1	1	-	-	1	1	1	-	2	-	?	?	?	3	2	?	?	-	1	1	1	2	3	-	2	3	-		2	2	1	10	30	6	33
ESS	1	1	2	1	2	1	1	1	?	1	2	?	1	1	2	1	2	1	1	2	1	1	3	1	1	?	1	2	1	1	1	1	3	1	1	1	1	1	2	1	1	1	3	1		1	1	0	43	3	57
ETT	1	1	1	?	2	1	1	2	-	1	3	1	2	1	1	1	1	1	?	1	1	1	3	1	1	1	2	2	1	1	3	1	2	-	1	1	1	2	1	-	-	1	1	1	2		-	5	39	2	46
EUU	3	1	1	1	1	1	1	3	2	-	1	2	1	2	1	1	-	2	1	1	3	2	1	1	2	1	1	1	1	1	1	1	1	-	1	1	1	1	2	1	1	1	2	1	1	2		3	43	0	55
RD	9	4	3	17	0	7	5	2	17	5	2	6	4	3	3	11	8	8	9	10	3	5	4	5	3	14	2	2	1	0	1	4	3	22	3	3	1	0	3	15	0	2	4	8	4	2	17	270			
CN	32	41	41	25	45	37	41	44	27	41	44	33	41	41	42	32	35	36	32	35	42	30	42	41	43	31	40	43	44	45	45	41	42	24	43	43	43	46	43	25	39	44	42	37	42	44	29		1824		
TR	5	1	2	4	1	2	0	0	2	0	0	7	1	2	1	3	3	2	5	1	1	5	0	0	0	1	4	1	1	1	0	1	1	0	0	0	2	0	0	0	1	0	0	1	0	0	0			68	
AC	31	48	61	14	72	33	58	65	11	46	77	33	48	45	47	28	40	42	29	42	49	32	58	39	47	27	62	73	50	82	65	43	67	3	52	47	49	70	58	15	50	55	60	36	51	60	22				2201

* See footnote below Table XI for interpretation of symbols used in matrix.

TABLE XIII

SOCIOMETRIC DATA OF CONTROL GROUP ON FIRST SOCIOMETRIC TEST, JANUARY 31, 1950, INDICATING EACH PUPIL'S ATTITUDE TOWARD OTHERS IN HIS CLASS (AT) AND THE ACCEPTABILITY OF EACH PUPIL BY HIS CLASSMATES (AC)*

	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	CAA	CBB	CCC	CDD	CEE	CFF	CGG	CHH	CII	CJJ	CKK	CLL	CMM	CNN	COO	CPP	CQQ	CRR	CSS	RS	Totals CS	Totals ?Q	AT
CA		3	2	-	-	-	-	-	-	-	-	2	-	-	2	?	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	1	3	-	2	?	-	2	31	11	2	-7
CB	3		3	1	1	-	1	2	2	1	2	1	1	2	1	2	1	?	1	1	2	2	?	1	1	2	1	1	1	1	1	1	1	1	1	1	?	1	1	1	3	1	1	1	1	1	1	40	3	53
CC	3	3		2	1	-	2	3	1	1	1	1	1	1	?	1	?	2	-	-	1	2	-	1	?	2	1	?	2	?	-	-	-	-	?	-	2	1	1	2	-	1	1	1	1	1	1	10	28	6	32
CD	1	2	2		1	1	2	2	2	1	1	?	?	1	1	1	3	1	1	2	1	1	1	1	1	2	1	1	2	1	1	1	1	3	1	1	1	1	1	2	1	1	1	1	1	1	0	42	2	55
CE	?	2	2	2		2	1	1	?	?	?	?	?	?	?	?	?	?	2	2	?	?	3	?	?	?	?	?	2	?	3	?	3	2	?	?	?	1	?	?	1	1	-	?	?	1	16	27	29
CF	-	-	-	2	3		2	-	-	-	1	-	-	-	-	1	-	2	3	2	-	-	2	-	-	-	-	-	2	2	2	-	3	1	-	1	-	-	-	-	1	-	-	-	-	-	28	16	0	2
CG	2	2	1	2	2	1		1	1	?	?	?	1	?	?	?	?	2	2	1	?	2	2	?	?	2	?	?	2	1	3	1	1	1	2	?	2	?	?	1	1	?	?	1	?	?	1	?	0	26	18	40
CH	2	2	3	-	-	-	-		1	-	-	-	?	?	2	?	?	?	-	?	-	3	-	2	2	-	-	?	-	?	-	-	-	?	?	?	-	2	-	2	-	-	2	-	3	21	12	11	5
CI	1	2	1	1	-	-	1	1		1	2	-	-	1	-	1	?	1	?	2	2	2	?	1	2	1	2	?	2	?	1	-	-	1	?	?	3	3	1	3	1	1	1	-	-	9	28	7	33
CJ	1	1	1	1	?	?	1	3	1		1	1	1	2	1	1	1	2	-	2	?	2	-	2	1	2	?	1	3	1	1	1	1	1	?	3	-	?	1	1	1	2	1	1	-	4	34	6	43
CK	2	-	-	?	?	?	?	?	2	-		-	?	2	?	2	?	?	?	?	3	?	?	?	?	?	?	3	?	2	?	?	?	?	?	?	2	1	1	3	?	?	?	?	2	?	2	4	13	27	23
CL	2	-	-	-	-	-	-	2	-	1	2		3	2	1	-	-	-	-	-	-	?	-	3	2	1	-	1	-	?	?	?	-	-	1	-	-	-	-	1	-	2	-	-	-	26	14	4	-2
CM	1	3	2	1	-	-	2	1	-	3	2	3		2	2	1	1	1	1	1	1	-	1	?	2	1	-	?	?	1	1	2	1	1	1	1	-	1	-	-	-	1	1	1	2	-	10	31	3	35
CN	1	1	2	1	1	?	1	2	2	1	2	1	-		1	1	1	2	1	1	1	1	?	?	1	3	2	1	2	?	2	1	?	?	1	?	1	3	1	1	?	?	3	?	1	1	33	10	46
CO	2	?	?	?	?	?	?	2	?	1	2	1	?	3		?	?	?	?	?	?	?	?	?	?	?	?	2	?	?	?	2	?	?	3	?	?	?	2	2	?	?	2	3	?	0	13	31	27
CP	2	2	1	1	1	-	1	?	1	1	1	-	1	3	-		1	2	-	1	2	1	?	1	?	2	2	?	3	?	2	1	1	?	1	?	1	3	1	1	?	1	2	?	1	4	31	9	41
CQ	2	2	?	-	-	-	?	?	?	?	1	-	?	2	?	3		2	-	?	2	1	-	?	2	-	2	-	3	3	?	?	?	?	1	-	?	2	?	1	?	-	?	-	1	11	16	17	19
CR	?	?	?	1	1	1	3	-	?	-	-	-	-	-	-	2	2		2	2	2	-	-	-	-	2	?	?	3	3	2	-	?	?	?	1	1	-	?	2	-	-	-	?	?	16	16	12	14
CS	-	-	-	-	3	2	2	-	-	-	-	-	-	-	-	-	-	2		-	-	-	3	-	-	-	-	-	-	3	-	2	2	-	1	-	-	-	-	-	-	-	-	-	-	35	9	0	-15
CT	1	1	2	2	1	1	2	1	2	-	1	?	1	?	2	1	1	1	2		?	1	-	?	1	1	?	?	3	-	3	-	-	2	?	?	?	3	?	?	1	1	1	1	?	5	27	12	35
CU	1	1	-	?	?	?	?	-	2	-	2	-	?	2	?	2	2	1	1	-		2	?	?	?	?	3	?	1	?	?	1	?	?	2	?	3	3	1	1	?	?	2	?	1	5	20	19	29
CV	?	1	1	-	-	-	-	3	2	1	?	?	1	?	?	2	2	-	-	-	2		-	1	3	2	3	?	1	?	-	1	1	-	?	?	1	2	1	2	-	?	?	2	?	11	21	12	24
CW	?	?	1	?	3	-	?	-	?	?	?	?	?	?	?	?	?	2	2	2	?	1		?	?	?	?	?	2	?	3	?	3	?	?	?	?	?	?	?	?	?	?	?	-	3	9	32	16
CX	3	1	3	1	1	?	1	2	2	1	?	?	2	?	?	2	?	1	1	1	?	2	1		1	2	1	?	1	1	1	1	1	1	1	?	1	2	?	1	2	1	1	1	1	3	0	34	10	48
CY	2	-	?	-	-	-	-	3	2	-	?	1	1	3	-	2	2	2	-	-	?	3	-	?		1	?	-	1	1	-	2	-	-	?	1	1	?	2	1	?	-	?	2	?	15	19	10	18
CZ	2	1	?	2	?	-	2	1	2	-	1	-	-	1	?	?	-	3	-	?	1	1	-	1	1		2	-	2	-	2	?	?	?	-	1	3	3	-	2	-	1	-	-	1	14	22	8	22
CAA	2	?	?	?	?	?	?	?	?	?	2	?	?	2	?	2	1	?	?	?	3	1	?	?	?	?		?	1	1	1	?	?	?	2	?	2	3	2	2	?	?	3	?	?	0	16	28	30
CBB	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1	1	1	1	-	1	1	2	-	2	2		2	1	-	2	-	-	-	-	-	-	3	2	1	-	3	3	2	22	22	0	13
CCC	1	?	?	1	-	2	2	?	1	-	2	-	1	?	?	2	1	2	-	3	?	1	-	1	2	1	2	-		3	1	1	?	1	?	3	1	2	?	?	?	1	?	?	?	6	24	14	32
CDD	2	-	-	2	-	-	3	-	-	-	-	-	-	-	-	-	-	1	3	-	-	-	-	-	-	2	-	2	-	2		3	-	-	-	-	2	-	1	-	-	-	-	-	-	33	11	0	-10
CEE	?	2	2	3	2	1	3	1	1	-	?	?	-	1	?	2	?	?	1	-	?	-	3	-	?	1	1	1	1	1		-	-	-	-	2	2	-	1	2	2	1	1	-	?	11	24	9	27
CFF	2	?	2	?	?	?	?	?	?	?	?	?	?	?	?	3	?	?	?	?	?	?	?	?	?	?	?	?	2	?	?	3		?	?	3	?	2	2	?	2	?	?	2	?	2	0	11	33	25
CGG	?	?	?	2	3	2	2	-	-	?	-	?	?	?	?	?	?	?	2	2	?	?	3	?	?	?	?	?	2	?	?	3	?		2	?	?	?	?	?	?	?	?	?	?	?	3	10	31	20
CHH	?	?	?	2	2	2	2	1	-	-	-	-	-	-	?	?	?	2	2	1	?	?	1	?	?	?	?	?	2	2	3	?	1		?	3	?	?	?	-	3	?	?	?	?	?	7	15	22	22
CII	?	?	?	?	?	?	2	?	?	?	-	-	?	2	-	-	-	?	?	?	-	?	?	?	?	?	3	?	?	2	?	-	?	?		?	2	3	-	?	?	?	3	?	?	8	7	29	9
CJJ	-	-	-	2	-	-	2	?	-	-	-	-	-	-	-	-	-	3	-	2	1	?	-	2	2	-	2	-	3	3	-	-	-	1	-		-	1	-	2	1	-	-	-	-	28	14	2	-1
CKK	2	1	1	2	?	?	3	?	?	?	1	?	?	1	?	2	?	?	?	?	2	1	2	?	?	2	2	?	3	?	?	1	?	?	1	?		3	1	1	?	1	2	?	1	0	22	22	36
CLL	1	-	?	1	-	-	1	1	-	-	2	-	?	1	?	2	1	2	-	-	3	2	-	-	-	-	1	?	2	-	-	-	-	1	1	-	2		1	1	1	2	3	1	1	15	25	4	23
CMM	2	?	?	?	?	?	?	?	-	?	-	-	-	?	?	?	?	?	?	-	?	?	-	2	?	?	1	-	2	3	?	?	-	?	?	-	?	1	2	2		2	?	-	2	2	2	9	11	24	13
CNN	3	3	3	-	-	?	-	1	2	?	-	?	-	1	?	1	1	2	?	1	1	1	?	1	2	?	1	2	?	1	-	1	1	-	-	?	?	1	2	1		1	2	1	2	2	8	26	10	32
COO	?	?	?	2	-	?	3	-	?	-	?	-	?	?	?	?	?	?	?	2	?	3	?	?	?	?	?	?	?	2	-	3	?	?	2	?	?	?	?	?	2		-	-	2	?	6	10	28	17
CPP	3	?	?	1	-	-	-	-	2	-	-	2	-	-	?	2	-	-	-	-	1	?	?	2	1	3	1	2	1	?	1	-	?	?	?	?	1	2	1	3	?		2	-	2	14	19	11	19
CQQ	?	2	?	?	?	?	?	?	2	?	?	1	1	?	2	-	2	1	?	?	?	2	?	?	?	?	?	2	2	?	-	?	?	-	?	?	3	?	3	3	-	2	?	-		?	-	6	14	24	22
CRR	1	1	1	2	1	1	2	1	1	1	?	-	1	1	1	3	1	2	1	1	1	1	1	1	1	2	1	1	1	2	1	1	2	1	1	1	1	1	1	2	1	3	1	2	1		3	1	42	1	55
CSS	3	-	3	?	?	?	?	2	-	-	-	-	-	-	-	2	?	?	-	?	2	-	-	3	?	2	2	?	-	?	?	-	-	?	-	-	?	-	-	-	2	-	2	-	2	-	-		21	11	12	4
RD	3	9	8	9	16	18	8	11	12	21	13	21	15	9	18	6	8	5	16	11	9	7	16	7	5	9	5	9	6	7	9	16	14	9	9	8	9	7	11	5	10	12	10	13	10		463			
CN	31	23	21	25	10	11	26	24	20	12	21	9	12	23	9	28	26	17	21	11	21	25	18	16	19	20	24	11	34	18	26	17	15	15	17	14	27	8	28	21	38	17	20	25	16	20		915		
?R	10	12	15	10	12	15	10	9	12	11	10	14	17	12	23	10	17	17	13	26	11	12	14	12	19	19	11	24	4	19	9	11	16	16	18	28	9	15	12	7	16	12	9	15	13	14			602	
AC	34	31	31	31	11	-2	41	29	20	-7	19	-9	0	31	0	43	17	43	10	23	28	31	-7	22	25	32	45	-7	59	39	44	4	9	15	18	18	14	37	54	15	34	10	15	34	13	23				1053

*See footnote below Table XI for interpretation of symbols used in matrix.

TABLE XIV

SOCIOMETRIC DATA OF CONTROL GROUP ON THIRD SOCIOMETRIC TEST, MAY 23, 1950, INDICATING EACH PUPIL'S ATTITUDE TOWARD OTHERS IN HIS CLASS (AT) AND THE ACCEPTABILITY OF EACH PUPIL BY HIS CLASSMATES (AC)*

	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	CAA	CBB	CCC	CDD	CEE	CFF	CGG	CHH	CII	CJJ	CKK	CLL	CMM	CNN	COO	CPP	CQQ	CRR	CSS	RS	Totals CS	TG	AT
CA		3	2	-	-	-	-	1	1	-	-	-	-	1	-	1	-	2	-	-	2	1	-	1	-	2	2	-	-	-	-	-	-	-	2	-	-	3	-	3	-	1	2	-	1	26	18	0	5
CB	3		2	1	1	1	1	1	2	1	1	1	1	2	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	3	1	1	1	2	1	0	44	0	56
CC	2	2		-	-	-	-	3	1	-	1	1	-	2	1	1	1	1	-	1	1	1	-	3	1	1	1	-	1	1	-	1	-	1	2	-	1	2	-	2	1	1	2	1	3	13	31	0	31
CD	1	1	1		1	1	1	1	1	?	1	?	?	2	?	2	1	2	1	3	2	2	1	1	1	1	2	1	3	1	2	?	1	1	?	1	1	2	1	1	1	?	1	1	1	0	37	7	49
CE	?	1	1	2		2	3	-	-	-	-	-	-	-	-	?	-	2	2	1	-	-	3	-	-	-	-	-	2	-	2	-	3	2	-	1	-	-	-	-	1	-	-	-	-	27	15	2	1
CF	-	-	-	2	2		3	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	1	-	-	-	-	-	3	2	1	-	1	2	-	2	-	-	-	-	2	-	-	-	-	30	14	0	-3
CG	2	1	1	1	1	1		1	1	1	?	?	1	?	?	2	1	3	1	1	1	1	1	1	1	1	2	1	2	3	1	?	1	1	2	1	1	1	1	2	2	1	3	2	1	0	39	5	53
CH	2	1	3	-	-	-	-		1	-	2	-	-	1	3	1	2	-	-	-	2	2	-	2	-	-	2	-	-	-	-	-	-	-	2	-	-	1	-	-	-	1	2	-	2	26	18	0	6
CI	1	2	1	1	-	1	1	1		1	2	-	1	3	-	3	1	1	1	1	2	1	?	1	1	3	2	-	1	1	1	1	-	1	1	-	2	2	1	2	1	1	1	1	1	6	37	1	44
CJ	3	-	1	1	-	1	1	2	1		2	-	3	2	2	1	2	1	1	1	2	1	-	3	1	1	1	1	-	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1	?	-	7	36	1	41
CK	1	1	1	-	-	-	-	1	1	1		1	1	2	1	2	1	-	-	-	3	2	-	1	1	-	3	-	-	-	-	-	-	-	2	-	-	3	-	1	-	2	2	-	-	22	22	0	12
CL	1	1	1	-	-	-	-	2	1	-	2		-	2	2	?	2	-	-	-	1	1	-	3	1	1	1	1	-	-	-	1	-	-	1	-	?	2	1	1	-	2	1	1	3	17	25	2	19
CM	2	2	1	1	-	1	2	1	1	3	1	1		1	1	2	1	2	-	1	1	2	-	2	-	-	1	1	2	1	1	1	-	2	1	-	-	-	-	-	1	-	1	1	-	13	31	0	29
CN	1	2	1	1	1	1	1	2	1	-	1	1	1		1	1	1	2	1	1	2	1	1	1	1	2	3	1	1	1	1	1	1	1	2	-	1	3	1	2	1	1	3	1	1	2	42	0	53
CO	1	1	2	1	1	1	1	3	1	-	2	1	1	3		1	2	1	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	3	1	1	2	1	1	1	1	1	1	1	1	43	0	54
CP	2	1	1	1	1	1	1	1	1	1	1	1	2	1		1	1	1	-	2	3	1	2	1	3	2	-	1	1	1	1	1	1	1	1	2	-	2	2	1	2	1	1	1	1	3	41	0	51
CQ	-	-	-	1	-	-	-	2	-	-	2	-	-	2	-	-		1	-	-	3	-	-	3	-	2	-	3	1	-	-	-	-	-	2	-	-	2	-	1	-	-	2	-	-	29	15	0	0
CR	1	-	1	1	-	1	3	-	1	-	-	-	-	-	-	1	1		1	-	2	-	-	1	-	1	1	-	3	2	2	-	-	1	1	3	-	-	-	2	1	1	2	-	1	20	24	0	15
CS	-	?	-	2	2	2	2	?	?	?	-	?	?	?	?	?	-	-	2		?	-	?	3	?	?	-	-	?	-	-	3	?	3	2	?	-	-	?	?	-	2	?	-	?	?	34	10	20	9
CT	1	3	1	2	1	2	2	1	1	1	1	1	1	2	1	2	1	1	-		1	1	1	1	1	1	1	3	1	2	?	-	-	1	2	1	1	1	2	1	1	1	1	-	4	39	1	47
CU	1	1	1	1	-	-	1	1	-	-	3	-	-	1	?	2	1	2	1	1		1	-	?	1	1	1	1	3	1	1	1	1	1	1	1	1	3	1	1	1	1	2	1	-	8	34	2	35
CV	1	-	1	1	-	-	1	2	-	1	2	1	1	2	?	-	3	-	-	-	2		-	1	3	-	3	?	1	-	1	-	-	?	2	-	-	2	-	-	-	1	2	-	2	19	22	3	17
CW	-	3	2	-	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	2	-	3	-	-	-	-	-	-	-	-	-	-	-	37	7	0	-20
CX	2	1	3	1	1	1	1	3	1	1	1	-	1	1	-	2	1	1	1	1	1	1	1		1	2	1	-	1	1	1	1	1	1	2	1	1	1	1	1	1	2	2	-	3	4	40	0	48
CY	2	1	1	1	-	-	-	2	2	-	1	-	-	2	1	-	3	1	-	-	2	3	-	1		1	1	-	3	1	-	-	-	-	2	-	-	1	1	2	-	-	1	-	1	20	24	0	17
CZ	3	1	1	-	-	-	1	-	3	-	-	-	-	1	-	2	-	2	1	-	2	-	-	1	-		1	-	2	-	2	-	-	-	1	1	2	2	-	3	-	1	2	-	-	23	21	0	12
CAA	1	-	?	-	-	-	1	2	?	?	2	-	?	2	?	2	1	1	-	?	3	2	-	1	1	1		-	1	1	-	-	-	?	2	-	1	3	1	3	-	1	2	1	-	14	23	7	22
CBB	3	3	-	-	-	-	-	2	-	-	2	-	-	-	-	2	-	-	-	-	2	-	-	2	-	2	-		2	-	-	2	-	-	-	-	-	-	-	1	1	-	-	1	1	1	26	16	0	0
CCC	1	-	-	1	-	2	3	?	1	-	1	-	1	1	2	-	2	1	1	-	1	1	1	1	1	1	-		3	3	-	-	1	1	2	2	2	-	2	1	1	2	-	1	13	30	1	31
CDD	2	-	1	-	-	1	1	-	-	-	-	-	-	-	-	2	-	3	-	1	2	-	-	-	-	-	2	-	2		3	-	-	-	-	3	-	2	-	2	-	-	2	-	-	29	15	0	0
CEE	-	2	1	1	1	-	3	1	1	-	-	-	-	1	-	-	1	2	2	1	1	1	2	1	1	1	1	-	2	2		-	1	1	?	2	1	3	1	2	1	1	3	1	1	10	33	1	37
CFF	3	-	3	-	-	-	-	3	-	-	-	-	-	2	-	2	-	-	-	-	1	1	-	2	-	1	2	-	-	-	-	-	-	2	-	2	-	2	2	-	2	?	-	-	-	-	29	14	1	-1
CGG	-	-	-	2	3	2	3	-	-	-	-	-	-	?	?	?	?	?	2	-	-	-	3	?	?	?	-	-	2	-	2	-		2	-	-	2	-	2	2	-	2	?	?	?	?	-	-	-	-	23	9	12	-2
CHH	-	-	-	?	-	2	3	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	3	2	-	-	-		-	2	-	-	-	2	-	-	-	3	-	-	-	-	35	8	1	-16
CII	3	-	-	-	-	-	-	-	-	-	2	-	-	3	-	-	2	-	-	2	2	-	-	-	2	-	?	?	2	-	-	-	-	-		-	2	2	-	-	-	-	2	-	-	32	10	2	-10
CJJ	1	1	1	1	-	-	2	1	1	-	1	-	-	1	1	1	3	1	-	1	1	-	1	-	1	1	-	3	3	-	-	1	1		-	1	-	2	2	-	-	1	1	1	-	-	18	26	0	15
CKK	2	1	1	1	?	-	3	1	?	1	1	?	1	1	1	2	?	2	1	1	2	?	1	1	1	1	2	1	1	3	1	2	1	1	?	1		3	1	2	1	1	2	1	1	1	38	5	51
CLL	2	1	1	1	-	-	1	1	1	-	3	-	-	2	-	2	1	2	-	-	3	1	1	-	1	1	2	1	3	1	1	-	-	1	1	2	-	1		1	2	1	1	2	1	1	11	33	0	36
CMM	3	3	-	-	-	-	1	2	-	2	1	-	-	1	-	-	1	-	-	-	1	2	-	1	2	1	1	3	1	-	-	1	1	-	1	-	1	-	1	2		1	-	-	2	1	2	19	25	0	19
CNN	3	3	2	-	-	-	2	-	1	-	-	-	-	1	-	2	-	3	1	-	1	-	-	1	?	2	1	-	2	-	2	-	-	-	-	-	-	1	2	-		1	2	-	-	-	84	19	1	9
COO	-	-	-	1	-	1	3	-	-	-	-	-	-	?	?	?	?	3	1	2	?	?	2	?	?	?	?	?	1	1	1	?	1	3	?	?	-	-	?	2		-	-	-	-	-	16	13	15	6
CPP	2	1	-	-	-	-	-	-	1	-	2	-	-	3	-	2	-	-	-	-	2	2	-	-	-	2	2	-	-	-	-	-	-	-	-	-	2	-	-	3	-	1	-		3	-	-	30	14	0	-2
CQQ	1	1	1	1	1	-	3	1	1	1	1	1	1	1	3	1	1	?	1	2	1	1	1	1	1	1	2	?	1	1	2	1	1	3	2	2	1	1	2	1	1	3	-	-	3	39	2	48
CRR	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1	1	3	1	1	1	2	3	1	1	3	1	2	1	2	2	1	1	1	1	1	1	2	1	2	1	1	1		1	0	44	0	56
CSS	2	-	3	-	-	-	-	3	-	-	-	-	-	-	-	2	-	2	-	-	2	-	-	3	-	1	2	-	2	-	2	-	-	-	-	-	-	-	2	-	1	-	1	1	-		29	15	0	0
RD	0	18	11	10	28	23	12	15	28	15	29	26	8	22	9	13	10	21	22	7	11	25	9	15	11	0	26	10	17	15	23	26	17	9	22	20	8	28	9	16	14	10	24	21	735			
CN	35	29	32	27	15	21	32	30	26	13	28	11	15	31	14	31	28	33	22	20	36	31	18	31	24	30	37	14	34	27	29	10	25	30	21	23	34	19	34	26	28	34	18	22		1153		
TR	1	1	1	1	1	0	0	2	3	3	1	4	3	4	4	3	1	1	2	1	2	1	1	4	5	3	1	4	4	0	5	0	2	3	1	1	2	3	1	2	2	0	2	1			92	
AC	52	32	34	10	-7	-2	47	37	15	-12	28	-16	-9	47	-4	42	26	48	6	3	34	38	1	35	10	38	53	-10	57	21	31	-6	-2	15	39	9	11	39	-3	38	10	18	30	-4	10				962

* See footnote below Table XI for interpretation of symbols used in matrix.

TABLE XV

SOCIOMETRIC DATA OF EXPERIMENTAL GROUP ON SINGING QUESTION, MAY 26, 1950, INDICATING EACH PUPIL'S ATTITUDE TOWARD OTHERS IN HIS CLASS (AT) AND THE ACCEPTABILITY OF EACH PUPIL BY HIS CLASSMATES (AC)*

	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	EAA	EBB	ECC	EDD	EEE	EFF	EGG	EHH	EII	EJJ	EKK	ELL	EMM	ENN	EOO	EPP	EQQ	ERR	ESS	ETT	EUU	RS	Totals CS	TO	AT
EA		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	3	1	3	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	3	1	45	0	52
EB	-		3	-	2	1	1	1	1	1	2	1	1	1	3	-	-	-	-	-	1	1	2	1	1	2	3	2	1	1	1	1	2	1	2	1	1	2	1	-	1	1	-	1	1	1	-	10	36	0	40
EC	1	1		1	3	-	1	2	1	1	3	1	1	1	1	1	-	-	-	1	1	1	2	1	2	1	3	2	1	1	2	1	2	-	1	1	1	2	1	-	-	1	1	-	1	2	1	8	38	0	44
ED	1	1	2		2	-	2	-	-	-	2	1	1	1	-	2	3	3	2	2	1	1	1	1	1	-	1	1	1	1	1	1	1	-	-	1	1	1	1	3	1	1	1	1	1	1	1	2	8	36	0	44
EE	-	2	3	-		-	-	-	-	-	3	-	3	-	1	-	-	-	-	-	1	-	2	-	-	-	2	-	2	1	1	2	2	-	-	-	-	2	-	-	-	-	1	-	1	1	-	29	17	0	1
EF	1	2	3	1	1		1	1	2	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	2	2	2	2	2	1	-	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1	45	0	56
EG	1	1	1	-	1	-		2	-	-	2	?	1	?	-	-	-	-	-	-	1	-	2	-	1	3	2	1	2	1	1	-	2	2	1	1	-	2	3	1	1	1	3	1	1	1	-	15	29	2	25
EH	-	1	2	-	3	1	3		1	2	3	-	1	1	1	-	-	-	-	-	1	1	2	1	1	1	2	2	1	2	2	1	2	-	1	1	1	1	1	-	1	1	-	1	1	1	-	12	34	0	36
EI	-	1	2	-	1	2	1	1		1	1	-	2	1	1	1	-	-	-	-	3	1	1	1	1	1	1	3	2	2	1	1	3	1	-	2	2	1	2	1	-	1	1	-	1	1	1	11	35	0	36
EJ	1	2	2	1	1	1	1	2	1		1	3	2	1	3	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	2	1	1	3	1	1	1	1	1	2	1	1	1	1	1	1	-	1	45	0	56
EK	-	2	3	-	3	-	-	-	-	1		-	3	-	1	-	-	-	-	1	-	2	-	-	1	2	2	1	2	1	2	2	-	1	-	1	2	1	-	-	-	-	1	1	1	1	-	22	24	0	16
EL	?	-	2	?	1	1	1	2	2	3	3		-	-	2	1	?	?	?	?	1	2	1	2	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	-	1	1	-	1	2	2	-	6	34	6	42
EM	1	1	3	1	3	1	2	2	-	2	3	2		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	-	1	1	1	1	1	-	1	2	1	1	1	2	-	4	42	0	52
EN	1	3	1	1	-	1	2	1	1	2	-	2	1		1	1	2	1	1	2	2	1	-	1	3	2	1	2	1	1	-	1	-	3	1	1	1	1	1	1	1	1	1	1	1	-	1	6	40	0	46
EO	1	2	2	1	2	1	1	2	1	3	2	3	2	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	3	1	2	1	1	1	1	1	1	1	1	1	1	-	1	45	0	56
EP	2	1	1	2	1	1	1	1	1	1	2	1	1	2	?		-	3	2	3	-	-	?	?	?	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	3	1	2	1	-	4	38	4	46
EQ	2	1	?	3	1	-	1	-	-	-	1	?	1	?	-	2		2	3	2	1	-	-	-	?	1	?	1	1	?	?	1	1	1	1	1	?	1	1	3	1	1	2	1	1	1	2	8	30	8	34
ER	2	1	1	3	1	1	1	1	1	1	3	1	1	1	1	2	3		2	-	1	1	2	1	1	1	1	1	1	1	2	2	1	1	1	1	2	1	1	1	1	1	2	1	1	1	-	2	44	0	56
ES	2	1	1	2	1	-	2	-	-	-	1	-	-	-	1	2	2	3		3	-	-	1	1	-	1	?	-	1	-	?	-	-	-	-	-	-	1	1	2	2	1	3	-	1	?	2	19	24	3	17
ET	2	1	1	1	3	1	1	2	1	1	3	1	1	1	1	1	1	1	2		1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	2	1	1	3	1	1	1	2	0	46	0	57
EU	1	1	2	1	2	3	1	1	3	1	2	1	1	1	1	1	1	1	1	1		1	1	1	2	1	2	1	1	2	1	1	1	1	1	1	1	2	1	1	1	1	2	1	3	1	1	0	46	0	66
EV	-	-	-	-	-	?	3	-	-	2	1	2	2	2	-	-	-	-	1	-	-		1	?	1	-	?	-	2	-	2	2	-	-	-	-	-	-	1	2	-	3	3	-	-	-	-	27	16	3	3
EW	1	1	2	-	2	1	2	1	1	1	2	1	2	1	1	-	-	1	-	1	1	-		1	1	2	3	3	1	1	1	1	3	1	2	1	1	2	1	-	1	1	1	1	1	1	1	6	40	0	46
EX	-	1	2	-	1	1	1	1	1	2	1	1	1	1	-	-	-	1	-	-	1	1	1		1	1	1	2	1	2	2	2	3	1	1	1	3	2	2	-	1	1	2	2	1	1	-	9	37	0	42
EY	1	1	2	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1		1	1	1	2	3	2	1	2	1	1	1	1	2	?	1	1	3	3	1	1	1	1	0	45	1	55
EZ	1	2	1	1	2	1	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2		1	1	2	2	1	1	1	1	1	1	3	2	1	1	1	3	2	1	1	1	1	0	46	0	66
EAA	1	1	2	-	2	-	1	1	-	1	2	1	1	2	1	1	-	-	-	1	1	1	2	1	1	-		3	1	2	2	1	3	-	1	-	1	3	1	-	1	1	1	1	1	2	-	11	35	0	36
EBB	1	2	2	1	2	1	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	-	1	1	3		1	2	1	1	3	1	2	1	1	3	1	1	1	1	1	1	1	1	1	1	45	0	56
ECC	1	1	1	-	2	-	2	1	1	1	2	-	1	1	1	1	1	1	-	2	1	-	1	1	1	1	1	1		2	1	1	2	-	2	1	1	1	3	1	2	3	3	1	1	1	1	6	40	0	46
EDD	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	1	2		2	1	2	1	1	1	1	1	2	1	1	2	3	3	1	1	1	0	46	0	66
EEE	-	1	2	-	1	1	1	2	-	1	2	1	2	1	1	-	1	1	-	1	1	1	1	1	1	-	2	2	1	3		3	2	-	1	1	1	1	1	-	1	-	1	1	2	3	1	9	37	0	42
EFF	-	2	2	-	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	3	2	2	3	3		1	1	1	1	1	1	1	?	1	1	1	1	1	2	-	3	42	1	53
EGG	1	1	1	1	2	1	1	2	1	3	2	1	1	1	3	1	1	1	1	1	1	1	1	2	1	1	2	3	1	2	2	1		1	2	1	1	1	1	1	1	1	1	1	1	1	-	1	45	0	56
EHH	?	1	1	1	1	1	3	1	1	1	1	1	1	3	1	1	?	?	?	1	1	3	1	1	1	2	2	2	2	2	2	1	1		1	1	1	1	1	?	2	1	1	1	1	2	1	0	41	5	55
EII	-	2	2	-	1	1	2	2	1	1	1	1	1	1	1	-	-	-	-	-	1	1	1	1	1	2	3	3	1	1	1	2	2	-		2	1	3	1	-	1	1	1	1	1	1	-	10	36	0	46
EJJ	1	2	1	1	2	1	1	2	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	1	1	2	2	1	3		1	3	1	1	1	1	1	1	1	1	1	0	46	0	66
EKK	-	1	1	?	1	1	1	2	2	1	1	?	2	1	1	?	?	-	-	-	1	1	1	3	1	3	1	1	1	2	3	2	1	1	1	2		1	1	?	2	2	-	1	1	1	-	6	35	5	43
ELL	1	2	2	1	2	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	1	1	3	1	2	1	1		1	1	1	1	1	1	1	2	1	0	46	0	66
EMM	-	1	1	-	1	-	1	-	-	1	1	-	2	1	1	-	-	1	2	1	1	1	1	2	1	1	1	1	3	2	1	1	2	-	1	-	1	1		-	2	3	2	2	-	2	-	13	33	0	33
ENN	2	1	1	3	2	-	-	-	-	-	1	-	1	1	-	2	3	2	2	2	-	-	2	-	1	-	-	-	1	1	1	1	1	-	1	-	1	1	1		1	1	2	-	-	1	3	17	29	0	26
EOO	-	1	1	-	1	1	1	1	1	1	1	1	2	2	1	1	-	-	-	1	1	1	1	2	1	1	1	1	3	2	1	1	1	1	2	2	1	2	3	1		3	-	2	1	1	-	7	39	0	46
EPP	-	1	1	-	2	-	1	2	-	1	-	-	2	1	-	2	-	1	-	1	-	-	1	-	1	1	1	1	3	2	2	1	2	-	1	1	1	2	3	-	3		1	1	1	1	-	15	31	0	36
EQQ	1	-	1	-	2	?	-	2	-	2	3	?	-	?	1	1	1	2	3	3	1	?	1	1	1	1	1	1	2	2	1	1	2	-	1	1	1	2	1	-	1	1		1	1	1	1	7	35	4	42
ERR	-	-	-	-	1	-	-	1	1	1	1	1	1	1	-	-	-	-	-	-	-	1	1	2	2	-	1	1	2	3	2	1	1	-	1	2	-	-	3	-	3	2	1		2	2	-	19	27	0	22
ESS	1	1	2	1	2	1	1	1	?	1	2	?	1	1	2	1	2	1	1	2	1	1	3	1	1	?	1	2	1	1	1	1	3	1	1	1	1	1	2	1	1	1	3	1		1	1	0	43	3	57
ETT	1	1	2	-	3	1	1	2	-	1	3	1	2	1	1	1	1	1	1	1	2	1	1	1	2	1	1	1	3	1	2	1	1	1	1	1	2	1	-	1	1	1	1	1	2		1	3	43	0	54
EUU	3	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	-	1	3	2	3	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1		1	45	0	55
RD	15	4	2	20	2	13	5	8	15	6	2	9	3	4	8	13	17	13	17	12	7	10	2	7	3	7	1	4	0	2	1	2	3	19	4	7	5	1	1	19	3	3	7	5	3	2	23	339			
CN	29	42	43	24	44	31	41	38	30	40	44	32	43	39	37	32	26	31	27	33	39	35	43	37	41	38	42	42	46	43	43	44	43	27	42	39	40	45	45	23	43	43	39	41	43	43	23		1770		
TR	2	0	1	2	0	2	0	0	1	0	0	5	0	3	1	1	3	2	2	1	0	1	1	2	2	1	3	0	0	1	2	0	0	0	0	0	1	0	0	4	0	0	0	0	0	1	0			45	
AC	22	52	69	12	72	22	52	47	21	49	70	31	56	41	37	20	18	31	21	37	38	28	50	38	46	41	69	62	66	69	63	54	72	11	50	37	39	71	59	10	52	54	56	42	47	52	6				2003

* See footnote below Table XI for interpretation of symbols used in matrix.

TABLE XVI

SOCIOMETRIC DATA OF CONTROL GROUP ON SINGING QUESTION, MAY 26, 1950, INDICATING EACH PUPIL'S ATTITUDE TOWARD OTHERS IN HIS CLASS (AT) AND THE ACCEPTABILITY OF EACH PUPIL BY HIS CLASSMATES (AC)*

	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	CAA	CBB	CCC	CDD	CEE	CFF	CGG	CHH	CII	CJJ	CKK	CLL	CMM	CNN	COO	CPP	CQQ	CRR	CSS	RS	Totals CS	TO	AT
CA		2	3	-	-	-	-	1	-	-	-	-	1	-	1	-	2	-	-	2	-	-	1	-	1	2	-	-	-	-	-	-	-	2	-	-	2	-	3	-	2	2	-	1	28	16	0	0
CB	3		3	1	1	1	1	2	2	-	-	1	-	2	1	1	1	1	1	1	-	2	1	1	1	2	1	1	1	1	1	1	1	2	1	2	1	1	3	1	1	1	1	1	4	40	0	49
CC	2	1		-	-	-	-	3	1	-	1	-	-	1	-	2	-	2	-	-	2	-	-	3	-	1	2	-	2	-	2	-	-	-	-	-	-	2	-	1	-	-	1	-	2	26	18	0	5
CD	2	1	1		1	1	2	1	1	-	1	-	-	1	-	2	1	2	1	2	2	1	1	-	1	1	2	1	2	1	2	?	1	3	1	3	1	1	2	1	1	1	1	1	5	38	1	47
CE	-	2	1	2		2	2	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	3	-	-	-	-	-	2	1	3	-	3	1	-	1	-	-	-	-	1	-	-	-	-	28	16	0	2
CF	-	-	-	2	2		2	-	-	-	-	-	-	-	-	-	1	-	3	2	1	1	-	-	-	-	-	1	-	3	3	-	-	2	2	-	2	-	-	-	-	2	-	-	-	-	29	15	0	0
CG	1	1	1	1	1	1		1	1	1	1	1	1	1	1	2	1	3	2	1	1	1	1	1	1	1	2	1	2	2	3	1	1	2	2	1	1	3	1	1	1	1	2	1	1	0	44	0	58
CH	2	-	3	-	-	-	-		-	-	2	-	-	-	3	1	2	-	-	-	1	2	-	2	-	-	1	-	-	-	-	-	-	-	-	3	-	1	1	-	1	-	1	2	-	1	27	17	0	2
CI	2	1	1	1	-	-	1	1		-	1	-	-	3	-	3	1	1	-	-	2	2	?	1	2	3	1	-	2	1	-	-	-	1	1	-	1	2	1	2	1	1	1	1	-	14	29	1	28
CJ	3	2	2	1	-	-	1	1	1		1	-	3	1	1	1	1	1	-	1	1	1	-	3	1	1	1	2	1	1	1	1	-	1	1	-	2	1	-	1	1	-	1	1	1	9	35	0	36
CK	2	-	-	-	-	-	-	2	-	-		-	-	2	-	2	2	-	-	-	3	1	-	-	2	-	3	-	-	-	-	-	-	-	-	1	-	2	3	-	-	-	1	-	-	31	13	0	-5
CL	2	2	1	-	-	-	-	3	1	2	1		3	2	2	1	1	-	-	-	1	1	-	3	2	1	1	2	-	-	-	1	-	-	1	-	1	-	1	1	1	1	-	2	1	1	15	29	0	28
CM	2	3	2	1	-	-	2	1	-	3	-	-		1	1	3	1	1	-	2	1	-	2	1	1	1	2	2	1	-	1	-	1	1	-	1	1	-	1	1	-	1	1	1	1	11	33	0	35
CN	1	1	2	1	1	1	1	1	1	-	1	1	1		1	1	1	2	1	-	3	1	1	1	1	2	3	1	1	1	2	1	1	1	2	-	1	3	1	2	1	1	2	1	1	3	41	0	51
CO	1	2	3	1	-	-	-	3	1	-	1	-	-	2		1	2	1	-	-	1	1	-	1	2	1	2	-	1	1	-	-	-	1	3	1	-	1	1	1	-	1	1	1	2	15	29	0	26
CP	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1		3	1	1	1	2	1	1	1	1	1	3	1	1	2	1	1	2	1	1	2	1	2	1	2	1	1	3	1	1	0	44	0	57
CQ	-	-	-	1	-	-	-	2	-	-	2	-	-	2	-	3		1	-	-	1	3	-	-	3	1	2	-	2	1	-	-	-	-	2	-	1	2	-	1	-	-	2	-	-	26	18	0	6
CR	1	-	1	1	-	1	3	1	1	1	1	1	1	1	1	1	1		2	1	2	1	1	1	1	2	1	2	2	3	1	1	1	1	2	1	3	1	2	1	1	2	-	1	3	41	0	52
CS	-	-	-	1	2	1	3	-	-	-	-	-	-	-	-	-	-	2		-	-	2	-	-	-	-	-	2	2	3	-	2	1	-	2	-	-	-	-	-	-	-	-	-	-	31	13	0	-5
CT	1	3	1	-	-	-	3	1	2	-	-	-	-	2	-	2	-	1	-		1	-	-	-	1	1	-	-	3	1	1	-	-	-	-	2	1	1	-	2	1	-	-	-	-	24	20	0	7
CU	1	-	-	1	-	-	1	1	-	-	2	-	-	1	-	2	1	2	-	-		1	-	-	-	1	2	-	3	1	1	-	-	1	3	1	1	3	1	1	1	1	2	1	-	18	26	0	19
CV	?	-	-	-	-	?	-	1	-	-	2	-	-	1	?	2	3	-	-	1	3		-	1	3	-	2	-	2	-	-	-	-	-	2	1	1	2	-	-	-	2	-	-	2	24	17	3	7
CW	-	-	-	2	3	-	2	-	?	?	?	?	?	?	?	-	-	2	2	2	-	-		-	-	-	-	?	2	-	3	-	3	-	?	?	-	-	-	-	-	-	-	-	-	25	9	10	-4
CX	2	-	3	-	-	-	1	3	-	1	-	-	1	1	-	2	1	2	-	1	1	2	1	-		-	2	1	-	1	1	1	-	-	-	1	1	1	2	-	2	-	1	2	-	3	17	27	0	24
CY	2	-	1	-	-	-	-	2	2	-	1	-	1	3	1	-	3	1	1	-	1	3	1	1	-		1	1	-	2	1	-	-	-	1	2	-	2	1	1	2	-	-	-	-	1	18	26	0	21
CZ	2	1	1	1	-	-	1	1	3	-	1	-	-	3	-	2	-	1	1	-	2	1	-	1	1	-		2	-	1	1	1	1	-	-	1	1	2	2	-	3	-	2	2	-	1	15	29	0	28
CAA	1	-	?	-	-	-	2	1	-	-	2	-	-	3	-	2	-	1	-	-	3	1	-	-	-	1		-	2	2	1	-	-	-	2	-	1	3	1	2	-	1	2	-	-	23	20	1	11
CBB	3	3	2	-	-	-	-	2	-	-	2	-	-	-	-	1	-	-	-	-	1	-	-	1	-	1	1		1	-	-	1	-	-	-	-	-	-	-	2	2	-	-	2	2	2	27	17	0	2
CCC	1	-	1	1	-	2	1	-	1	-	-	1	-	2	-	2	-	2	2	-	1	-	1	-	-		3	3	-	-	1	1	3	1	2	-	1	1	1	2	-	2	18	26	0	22
CDD	2	-	1	-	-	-	3	-	-	-	-	-	-	-	2	-	3	-	1	2	-	-	-	-	-	2	-	2		3	-	-	-	-	2	-	2	-	1	-	-	2	-	-	30	14	0	-2
CEE	1	1	1	1	2	-	3	1	1	-	-	-	1	1	-	1	1	3	3	-	1	1	2	1	1	1	1	-	2	2		1	1	1	1	2	1	2	1	1	1	-	1	1	1	8	36	0	40
CFF	3	3	2	-	-	-	-	2	-	-	1	-	-	1	-	3	-	-	-	-	2	-	-	2	1	2	1	-	-	-	-	-	1	-	-	1	-	-	1	-	2	?	-	2	-	1	26	17	1	4
CGG	-	-	-	2	3	-	1	-	-	-	-	-	-	-	-	-	-	?	?	3	-	?	?	3	?	?	?	?	?	-	?	2	-	-	?	-	?	-	-	-	-	-	-	-	-	-	26	6	12	-12
CHH	-	-	-	3	2	2	3	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	2	-	-	-	-	-	2	1	2	-	1		-	1	-	-	-	-	2	-	-	-	-	30	14	0	-2
CII	-	-	?	-	-	-	3	2	-	-	2	-	-	3	-	1	2	1	-	-	2	2	-	?	?	?	2	-	1	1	2	-	-	?		-	1	2	-	-	-	-	3	-	-	23	16	5	7
CJJ	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	1	-	3	-	-	1	1	-	-	-	-	1	-	2	3	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	34	10	0	-17
CKK	2	1	1	2	?	-	3	1	?	1	1	?	1	1	1	2	?	2	1	1	1	1	1	1	2	1	1	3	1	2	1	1	1	?	2		1	1	2	1	1	3	1	1	1	1	1	38	5	51
CLL	1	-	1	1	-	-	1	1	-	-	2	-	-	1	?	2	1	2	-	-	3	1	-	-	1	-	2	1	3	1	1	-	-	1	3	1	1		-	1	-	1	2	-	1	17	26	1	20
CMM	2	2	1	-	-	-	-	1	1	1	-	-	?	1	-	-	1	-	-	-	2	2	-	1	2	1	1	2	-	-	-	1	-	-	-	-	2	3		3	?	-	2	-	1	21	21	2	12
CNN	3	3	3	-	-	-	2	-	2	-	-	-	-	1	-	1	-	2	-	-	2	-	-	-	-	2	1	-	2	-	2	-	-	-	-	-	1	1	-		-	1	1	-	-	27	17	0	3
COO	?	?	?	1	-	3	3	?	?	?	?	-	?	?	?	?	?	2	1	2	?	?	-	-	?	?	?	?	2	2	2	?	1	3	?	1	?	?	?	-		-	-	-	-	9	12	23	14
CPP	2	-	-	-	-	-	-	-	-	-	2	-	-	2	-	2	-	-	-	-	2	3	-	-	-	1	3	-	-	-	-	-	-	-	-	-	-	3	-	2	-		2	-	2	32	12	0	-6
CQQ	2	1	1	1	1	1	2	2	1	-	1	-	1	1	-	3	1	1	1	1	2	1	1	1	2	3	-	1	1	2	1	1	1	3	1	2	2	1	1	1	1	-	-			6	38	0	46
CRR	2	1	1	1	-	-	2	1	1	-	1	-	-	1	-	2	2	-	-	1	2	2	-	1	2	1	2	-	-	2	1	1	-	-	1	-	1	1	-	3	-	-	-		3	18	26	0	21
CSS	2	-	3	-	-	-	-	3	-	-	-	-	-	-	-	2	-	2	-	-	2	-	-	3	-	1	2	-	2	-	2	-	-	-	-	-	-	-	2	-	1	-	1	-	-		30	14	0	-2
																																													852			
																																														1063		
	2	33	2	3	3	2	1	2	2	2	2	2	3	2	2	4	1	3	2	3	2	1	0	2	2	1	2	3	3	2	3	0	1	0	2	1	0	2	1	0	0	1	0	0				65	
	2	1	22	30	20	12	12	30	32	19	8	20	5	11	32	11	36	23	34	17	27	19	37	28	14	15	25	23	30	36	12	35	30	20	15	29	21	28	28	37	16	33	18	24	21	31	14	26				
	2	1	38	13	-11	-14	40	34	3	-23	19	-32	-13	39	-13	28	10	21	1	1	29	27	-8	19	15	29	53	-13	38	30	37	-10	-8	5	35	12	21	63	-9	-44	-4	6	41	-15	18					786

* See footnote below Table XI for interpretation of symbols used in matrix.

The symbols on the matrix represent the expressed reactions of each pupil toward every other individual in the class. Each pupil's responses were entered in the rows of the matrix under the classmates' names. If a pupil chose a classmate to sit by, and as a desired co-participant in two activities--the special chorus and the quartet--the number 3 was entered in the row to the right of the pupil's name and below this classmate's name. If the pupil chose the classmate as one to sit by and as a desired fellow-member of the special chorus, the number 2 was entered at the proper place on the matrix. If the classmate were chosen to sit by only, it was entered on the matrix as 1. If the classmate were not known, this was indicated on the matrix by a question mark. According to the directions given at the time the sociometric test was administered, the question mark was to be used for those pupils not known. It was not to be used to represent indifference or indecision. If the pupil preferred not to be asked to sit by the classmate, it was considered a rejection and entered as a minus on the matrix. Thus each pupil had five categories by which to rate each classmate. The classmate could be chosen for the following: to sit by, for the special chorus, and for the quartet; for the first two

of these; for the first of these; he could be unknown; or be rejected.

A schematic representation given in Figure 2 shows the pattern of attraction and repulsion offered each pupil in rating his classmates. It is possible to examine

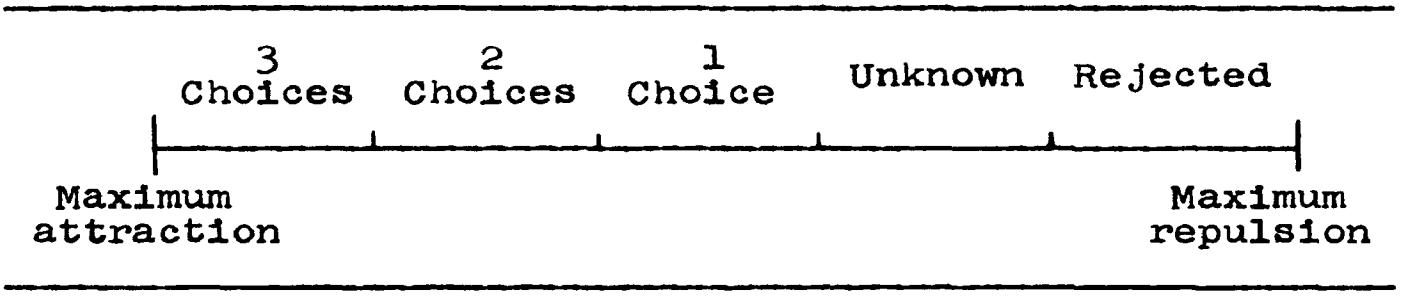

Figure 2.

SOCIOMETRIC RATING SCALE

in detail the range of rating each pupil gave each of his classmates. The columns represent the way in which each member of the class was reacted to by his classmates, and the range of ratings given each pupil can be examined.

The totals for the rows appear at the extreme right. The total of all rejections a pupil made of his classmates was placed under RS (rejections). The number of classmates a pupil chose was totaled under CS (choices). The number of pupils unknown was totaled under ?G (question marks given). AT, the total attitude score, was

recorded as the sum of all the numbers in the row minus the number of rejections (RS). The question marks were considered as zero and did not influence the attitude score. The attitude total, thus, was a summation of all the weights of attraction a pupil showed for his classmates minus the total number of rejections he made.

The totals for the columns appear below the matrix. The total number of times a pupil had been rejected by his classmates was recorded as RD. The number of classmates who had chosen the individual indicated at the top of the column was indicated as CN. The total number of ?'s received by an individual was represented as ?R (question marks received). AC was the total acceptability score consisting of the total of the numbers in the column minus the number of times rejected (RD).

Trends of the Experimental and Control Group in Rejections, Choices, Unknowns and Attitude-Acceptability Scores. Primary consideration was given to the first sociometric test administered January 31, and the third sociometric test, administered May 23, for these were the pre-test and final test involving the same question. The expansion of the number of choices a pupil made of his classmates was one of the principle objectives of this undertaking. A larger CS number indicated expanding interest in others. Another indication of making more

friends was expected to appear in the reduction of question marks in the final test over the pre-test.

An over-all class trend could be interpreted by considering totals of the pre-tests and final tests for each group. It will be seen that all the rejections given (RS) would equal all the rejections received (RD), although the number of rejections a pupil gave was seldom equal to the number of rejections he received. The same is true with all the other total of choices, unknowns, and attitude and acceptability ratings, for the grand total given must necessarily equal the grand total received, but the inner-relationship of choices, question marks given, or attitude scores given by the pupil did not often equal the choices received, question marks received and acceptability received from the classmates.

Consideration of these general trends begins with noting the grand totals for each sociometric test which are found at the lower right-hand corner of each matrix, Tables XI to XIV. The first test of the experimental group showed 1,181 choices were made out of a possible 2,162 relationships for this class. The possible number of relationships were secured by adding all the choices, rejections and unknowns together. This showed that the choices on the experimental pre-test made up 55 per cent

of the possible relationships. The control group on the same test showed 915 choices out of a possible 1,980 or 46 per cent of the possible relationships were choices. The unknowns on the experimental pre-test numbered 749 or 35 per cent of the possible relationships, and for the same test the control group had 602 unknowns or 30 per cent of the relationship. The rejections of the experimental group on the pre-test numbered 232 or 10 per cent of the possible relationships and 463 or 24 per cent of the possible relationships in the control group. For the final sociometric test the experimental group showed 1,824 choices or 85 per cent of the total possible relationships, 68 unknowns or 3 per cent, and 270 rejections or 12 per cent. For the same test the control group showed 1,153 choices or 57 per cent, 92 unknowns or 5 per cent and 735 rejections or 38 per cent of the total possible relationships. The totals and the corresponding per cent distribution are given in Table XVII.

The total possible relationships in attitude and acceptability scores because of their weighted quality are not the same as the possible relationships shown above. If each pupil in the experimental group gave the maximum number for the attitude score on the sociometric test, he would have given three classmates 3 points each (for the quartet), he would have given eight classmates

TABLE XVII

PER CENT DISTRIBUTION OF CHOICES, UNKNOWNS, AND REJECTIONS IN THE POSSIBLE TOTAL NUMBER OF RELATIONSHIPS ON THE PRE-TESTS AND FINAL TESTS FOR THE EXPERIMENTAL AND CONTROL GROUPS

	Experimental Group		Control Group	
	Pre-Test	Final Test	Pre-Test	Final Test
Choices	1181 or 55%	1824 or 85%	915 or 46%	1153 or 57%
Unknown	749 or 35%	68 or 3%	602 or 30%	92 or 5%
Rejections	232 or 10%	270 or 12%	463 or 24%	735 or 38%
Totals	2162 or 100%	2162 or 100%	1980 or 100%	1980 or 100%

2 points each (for the special chorus), and the remainder of the forty-six classmates, or thirty-five, would have been given 1 point each (to sit by). The maximum attitude score then that each pupil might have extended to his classmates would have been (3 x 3) + (2 x 8) + (1 x 35) or 9 + 16 + 35 or a possible attitude score of 60. The maximum total attitude score, if no rejections or unknowns

were entered on the test for the experimental group would have been 60 x (N - 1) or 60 x (47 - 1) which was 2,760. As a maximum attitude score for the control group a pupil might have given three classmates 3 points, eight classmates 2 points each, and the remainder of the pupils, forty-four minus eleven or thirty-three, would have received 1 point. This gave (3 x 3) + (2 x 8) + (1 x 33) or 9 + 16 + 33 for a total possible attitude score of 58. The maximum total attitude score possible for the entire control group became 58 x (N - 1) or 58 x 44 which was 2,552.

Although the total of all the attitude scores of each pupil toward his classmates necessarily equaled the total acceptability scores for all the pupils, the individual attitude score for a pupil was very rarely the same as the acceptability score this pupil received from his classmates.

The attitude-acceptability total on the experimental pre-test was 1,564 or 57 per cent of the 2,760 possible attitude-acceptability total. The attitude-acceptability total of the final test was 2,201 or 79 per cent. The attitude acceptability total for the pre-test of the control group was 1,053 or 41 per cent; for the control group's final test the attitude-acceptability total was 982 or 39 per cent. The per cent distribution

of attitude-acceptability totals for the experimental and control groups are given in Table XVIII.

TABLE XVIII

PER CENT DISTRIBUTION OF ATTITUDE-ACCEPTABILITY TOTALS FOR THE PRE-TEST AND FINAL TEST OF THE EXPERIMENTAL AND CONTROL GROUPS

	Attitude-Acceptability Score	
	Pre-Test	Final Test
Experimental Group	1564 or 57%	2201 or 79%
Control Group	1053 or 41%	982 or 39%

A comparison of the per cent distributions for the experimental and control groups, Table XVII, shows that while the experimental group gained 30 per cent on choices during the self-study project, the control group, starting at a lower per cent, gained only 11 per cent. This was a significant gain in choices for the experimental group over the control group, the latter of which was assumed to represent the usual classroom situation. There was a smaller per cent indicating unknowns initially in the control group, 30 per cent as compared to 35 per cent in the experimental group. However, the gains showed that the experimental group eliminated 32 per cent of the unknowns during the study, and the control group, 25

per cent. This slight difference might indicate that children would become acquainted with each other to about the same extent in the general classroom situation without the self-study project.

In both the experimental and control groups more rejections were given in the final tests. Although the number of unknown people in both groups was substantially decreased by the end of the semester, this did not mean all were accepted. In fact many became known only to be rejected. The number of rejections made in the experimental group increased from 232 to 270 or 2 per cent and the rejections increased from 463 to 735 in the control group, an increase of 272, or 14 per cent. Thus it becomes evident that increase in acceptability status did not depend merely on pupils becoming acquainted.

The over-all improvement in acceptability increased in the experimental group from 1,564 to 2,201 and in the control group the acceptability actually decreased from 1,053 to 982, as shown in Table XVIII. This was an increase of 637 acceptances or 22 per cent in the experimental group, and decrease of 71 or 2 per cent in the control group. The group self-study project thus made a significant difference in the acceptance of classmates.

Mean and Standard Deviation of Total Scores. Other characteristics of the sociometric data were compared in respect to the means and standard deviations of the reactions considered above. The arithmetic mean and standard deviation were computed for the pre-test and final sociometric test for both the experimental and the control groups. These computations are given in Tables XIX and XX.

TABLE XIX

MEANS AND STANDARD DEVIATIONS OF REACTION SCORES ON PRE-TEST AND FINAL SOCIOMETRIC TEST FOR EXPERIMENTAL GROUP

Reaction	Pre-test		Final Test	
	Mean	S.D.	Mean	S.D.
Rejections made of classmates	4.93	4.30	5.74	6.92
Choices made of classmates	25.13	9.62	38.81	7.51
?'s given (unknown)	15.94	10.46	1.45	2.11
Pupil attitude toward classmates	33.28	11.78	43.28	14.41
Rejected by classmates	4.93	4.61	5.74	5.10
Chosen by classmates	25.13	8.14	38.81	5.88
?'s received (unknown)	15.94	6.89	1.45	1.78
Pupil acceptability by classmates	33.28	18.84	43.28	17.75

TABLE XX

MEANS AND STANDARD DEVIATIONS OF REACTION SCORES ON PRE-TEST AND FINAL SOCIOMETRIC TEST FOR CONTROL GROUP

Reaction	Pre-test		Final Test	
	Mean	S.D.	Mean	S.D.
Rejections made of classmates	10.29	9.83	16.33	11.04
Choices made of classmates	20.33	7.37	25.62	11.31
?'s given (unknown)	13.38	10.29	2.05	4.10
Pupil attitude toward classmates	23.40	16.64	21.82	22.04
Rejected by classmates	10.29	4.12	16.33	6.69
Chosen by classmates	20.33	6.07	25.62	7.10
?'s received (unknown)	13.38	4.22	2.05	1.72
Pupil acceptability by classmates	23.40	16.75	21.82	22.05

A comparison of the means, Tables XIX and XX, shows the same trends indicated by the per cent distributions given in Tables XVII and XVIII: the rejections were increased slightly in the final test for the experimental group and decidedly for the control group, the choices increased in both groups but significantly more in the experimental group, the unknowns decreased significantly in both groups but to such like extent that this difference was not significant, and the

attitude-acceptability was increased substantially for the experimental group and decreased in the control group. Furthermore a study of these tables of means shows the average number of each type of reaction made by and in regard to each pupil, and the standard deviation for each. An addition of the pre-test rejection mean, 4.93, choice mean, 25.13, and unknown mean, 15.94, gave 46.00 for the experimental group as the total number of possible reactions for each pupil of the experimental group. See Table XIX. The same total was obtained by adding the final test rejection mean, 5.74, choice mean 38.81 and the unknown mean, 1.45, for the experimental group. When the pre-test means of the control group for these reactions, given in Table XX, were added, 10.29, 20.33, and 13.38, the total possible reaction for each pupil of this group was found to be 44.00. The same number was also secured by adding the first three reaction means of the final test for this group, 16.33, 25.62, and 2.05.

Rejections in the Experimental Group. The rejection means made by the pupils of the experimental group on the pre-test and final test were 4.93 and 5.74, respectively; see Table XIX. This is an average of about one more rejection per person after the group became acquainted. The standard deviations, 4.30 and 6.92 for

the same two tests showed the extended extremes in rejections on the final test. Eight pupils made no rejections on the pre-test; see Table XI; and 12 made no rejections on the final test, see Table XII. The largest number of rejections indicated by any pupil in the pre-test was 18. This number of rejections was made by two individuals, EBB and EMM. In the final test EMM had increased the rejection of her classmates to 32. EH had increased her rejections from 8 to 23, EV from 12 to 22, and EL from 0 to 21. None of these pupils were rejected more than 5 times by their classmates in the pre-test, see Table XI. Of these same pupils giving rejections, on the final test EL received 6 rejections and EV, 5, the others receiving 3 or less, see Table XII. These were not in the least extreme rejections. One of the girls was afflicted with a speech impediment, and the other was from the extreme lower-economic level. Both girls had missed a large number of days of school; the former from hospitalization and the latter from the family's failure to see that the child came to school. There would be no reason to consider either of these as clinical cases, yet it was apparent that both girls were in need of guidance. EH and EBB could be considered exclusive as far as this class was concerned. They were careful of whom they were seen with, and EH had shown an

increasing interest in the girls and boys, too, of the eighth grade. The case of EMM was rather serious, for she was living with a widowed mother in home conditions that had attracted the attention of the police officers. The girl missed several class periods during the semester to appear in court. On the pre-test EUU received 17 rejects; EI, 19; ED, 14; and both EZ and EHH, 13. On the final test EUU had not gained in acceptance; EHH, ED, and EZ were less frequently accepted; but EI's acceptability had improved slightly. EUU was a small boy who demanded attention. He seemed determined to be heard on all occasions, and he doted on entertaining others by singing alone, impersonations, and giving reports. He wished to be in the foreground, and since he made only 3 rejections of his classmates on both the pre-test and the final test, it could be assumed that his attitude toward his classmates was more friendly than the average pupil in the group. EHH was a small girl of the lower socio-economic level who was little acquainted with the middle-class cultural background. She appeared overly eager to win friends. On three occasions she was observed before class dividing candy and gum with those near her. She rejected only one girl on the pre-test and none on the final test. ED and EI were a boy and girl from the lower economic level, residing outside the city in a small

community which offered no cultural privileges. They were often dirty and usually unkempt. EZ was an emotionally unstable girl who was known to cry, pout, and sulk in school situations.

Rejections in the Control Group. The rejections in the control group began at twice the average number of rejections made by the experimental group, 10.29, and increased to 16.33 by the final test with standard deviations of 9.83 and 11.04, respectively, see Table XX. There were 7 pupils giving no rejections on the pre-test and 4 giving no rejections on the final test. At the other extreme, one pupil, CS, made 35 rejections on the pre-test from a possible 44 reactions, it will be recalled. CDD made 33 rejections; CA, 31; and CF and CJJ, 28 rejections each. These are given on Table XIII. CS reduced his rejections on the final test to 34; CW made 37 rejections, or, in other words, accepted only 7 classmates; CHH increased his rejections from 15 to 35; CII made 32 rejections; CPP and CF each 30; CSS, CFF, and CDD, 29; and CBB, 28. It was observed that in the final test of the control group, 18 pupils rejected half or more of their classmates, and 14 pupils were rejected by half or more of their classmates. In contrast to this only two pupils in the experimental group rejected half or more of their classmates, and none were rejected

by half or more of their classmates. It can be assumed that something happened in the self-study project which influenced the pupils to find fewer reasons for rejecting their classmates. It can also be assumed that without guidance children in a normal classroom situation are less tolerant of their classmates.

Returning to an examination of the rejections made by the pupils in the control group, it was found that CS who rejected many of his classmates was older, at 13 years and 9 months, than the average child in the group who was 12 years and 10 months old. This boy became decidedly more unpopular as the semester progressed, receiving 16 rejections at the beginning of the semester and 21 on the final test. He was restless in the group and made himself obnoxious by teasing, tripping, snatching, and making cutting remarks directly to and about his classmates. The pupils who sat near him usually complained of some advantage he had taken of them on the average of once a week. CDD was noticeably exclusive in the group, and his unpopularity increased during the semester. CA was cautious in selecting her friends, and she experienced more rejections on the final test. Remarks overheard concerning the operetta costume she was to wear would tend to indicate a feeling of insecurity which was again revealed by her choice of friends. CF

was a boy who sought attention. He was an extremely large boy and lived with his parents in a trailer in a poverty-ridden outlying district. CJJ lost acceptance with his classmates during the semester, perhaps, due to his ultra-exclusiveness. He had one of the highest I. Q.'s in the class, and was fastidious in matters of dress as well as choice of friends. His condescension and judgment of his classmates was apparent, and he often acted with complete disregard for or even to directly irritate the feelings of others. CHH also lost in acceptance between the pre-test and the final test. Most of the rejections he received were from girls who evidently did not care to sit by this small, quiet boy, who came from a farm. CW rejected more individuals and was less approved by his classmates after they became acquainted with him. He was the oldest and largest boy in the class. Some physical ailment made it necessary for him to drop his physical education course and to accept music as an elective. He made remarks which indicated his scorn of the girls in the class. He chose only one girl on the pre-test, rejected her on the final test and chose two others. CW also frequented the principal's office to settle accounts connected with his behavior in other parts of the school. CII, a girl new to the community, was not less accepted, for she received 9 rejections in

and not making the expected reciprocation of kindnesses extended her. CE, the only Negro boy in the class explained in an interview that he knew his classmates did not like him, and he was going to "beat them to it" by rejecting them first on the sociometric test.

Choices in the Experimental Group. The experimental group made an average number of 25.13 choices of classmates in the pre-test and 38.81 choices in the final test. The standard deviation of pupil's chosen by classmates was 8.14 and 5.88 for the two tests, respectively. This shows a greater consistency of choices made and choices received in the final test as well as a larger number chosen. As has been pointed out earlier, for the experimental group most of the question marks in the pre-test, when removed, became choices. The matter of choice is so closely associated with attitude and acceptability that specific situations and particular pupils will be discussed in the section on attitude and acceptability. Choice and factors influencing choice are basic to any sociometric study. Cohesion and elements of good group relationships depend upon the group's sensing a feeling of affinity which is based on wide choices.

The Choices Made by the Control Group. The number of choices on the pre-test and final sociometric test

increased from 20.33 to 25.62 with standard deviations of 7.37 and 11.31, respectively, for choices made and 6.07 and 7.10, respectively, for choices received. In both cases there was more variation in the number of choices made in the final test. This would tend to indicate that in the matter of choices the control group was less homogeneous at the end of the semester than at the beginning. This would also tend to suggest that the control group was not making strides toward an even distribution of pupils accepting classmates. Some were choosing many associates while others were choosing very few.

Unknowns in the Experimental Group. The means of the unknown pupils for the pre-test and final test of the experimental group were 15.94 and 1.45, respectively; see Table XIX. Each pupil, accordingly, became acquainted with an average of 14 classmates whom he had not known at the beginning of the semester. The standard deviations, 10.46 and 2.11, for the pupil's giving question marks, and 6.89 and 1.78 for those receiving the question marks on the two tests, showed the extreme variation of numbers unknown at the beginning of the semester and the narrowing down of this difference by the end of that time. The new 7B boy who knew only two pupils and was known by only

7 at the beginning of the semester markedly influenced these wide standard deviations found on the pre-test.

As the 749 unknown classmates in the experimental group at the beginning of the semester were reduced to 68 at the close, all but 38 of these unknowns became choices; see Tables XIII and XIV. In the experimental group EL, mentioned above in relation to rejections, was the least known individual in the group according to the final test. Seven classmates failed to recognize her from her name. Her extended absence would effect this, and also her hesitancy to take part in discussions. But during the semester she had become known to 18 classmates who had not known her previously. ENN, a boy who took little part in the class activities, was not known by 6 of the girls in the class. Two other boys EA and ES were not known to 5 girls, and EV, who was frequently absent, was not known by 4 girls and 1 boy. No other pupil in the group was known as well at the beginning of the semester as EQQ; only five people did not know him. He became a leader in the class, although not the class president, and was known by everyone at the end of the semester. The next best known pupils at the beginning of the semester were EG, EH, EK and ELL, all of whom became known to every pupil in the class by the final test. A reticent girl, EKK, did not know 8 of her

classmates at the end of the semester. She became acquainted with 19 classmates, decreasing her 27 question marks given at the beginning of the semester to 8 at the end. An unexplainable instance occurred with EQQ's indication of those he did not know. He gave question marks to 15 individuals at the beginning of the semester, and 8 at the end. Perhaps this affable boy was so busy with his immediate milieu that he overlooked getting acquainted with 5 classmates, but it would appear, since he gave question marks to three classmates whom he had chosen in the pre-test, that he was confused in some way by the directions accompanying the test. The greatest improvement in learning to know his classmates was made by the new 7B boy, EA, in the experimental group who through a conflict in schedules had to be assigned to this particular vocal music class. Although he knew only the two boys who sat on either side of him the first day of the semester, he indicated that he knew every pupil in the class on the final test. Thirty-nine pupils indicated that they did not know him at the beginning of the semester, but all the class except 5 knew him at the time of the final test.

Unknowns in the Control Group. The means of the pre-test and final test unknowns of the control group were 13.38 and 2.05, respectively; see Table XX. The

standard deviations of the question marks given were 10.29 and 4.10, respectively, on the pre-test and final test. The standard deviations of the question marks received were 4.22 and 1.72, respectively, for the same two tests. Each individual in the control group came to know an average of about 11 classmates during the semester. The difference between pre-test and final test standard deviations of the number of question marks received was smaller for the control group than for the experimental group. Thus, the number of individuals who were unknown to their classmates had become more congruous.

In the control group the unknowns were reduced from 602 to 92; see Tables XIII and XIV. Of these relationships 238 became choices while over 272 or 53 per cent of the unknowns were turned to rejections by the end of the semester.

In the control group CCC was known best at the beginning of the semester and was known by everyone at the end of the semester. Although he was not the president, he was one of the leaders of this group. CS, mentioned previously in connection with numerous rejections of his classmates, indicated that he knew everyone at the beginning of the semester, but he gave 20 question marks at the end of the semester. Although COO, a

retiring boy, learned to know 13 classmates during the semester, this still left him with 15 unknowns. CGG had 12 unknowns at the beginning of the semester. CO was least known at the end of the semester with 8 classmates not knowing her, 6 of whom were boys. She was a girl of large proportions and rather masculine ways, who had been reared by her father since the death of the mother which occurred before the girl started to school.

Attitude and Acceptability Scores in the Experimental Group. The average attitude and acceptability score for the experimental group's pre-test was 33.28 and for the final test, 43.28; see Table XIX. This was a gain of 10 points. The standard deviations for the attitude scores were 11.78 and 14.41 for the two tests. This group, although it showed considerable average gain in attitude status had a wider range of attitude scores on the final test than on the pre-test. The standard deviations of the acceptability score were 18.84 and 17.75, respectively. This shows a great variety in acceptability scores, but the group tended toward greater homogeneity in acceptability scores on the final test.

Examples of high attitude scores on the pre-test for the experimental group were EG and EU. The former also received a high acceptance score on the same test. EV had the lowest attitude score except for the 7B boy,

EA. EA's low score was due to his not knowing his classmates; EV's low score was due to the fact that she received 12 rejections and that there were 19 classmates whom she did not know. By the end of the semester EU still had one of the highest attitude scores, but she had been joined by EII, EJJ, ELL, EY and EB. The lowest attitude score, 5, was that of ENN who was described in the section on rejections. EV and EH had the next lowest attitude scores. EG had the highest acceptability score, 59, in the pre-test, but 11 pupils excelled her in acceptability by the end of the semester. The highest acceptability score in the final test was that of EDD with 82 points. EDD, the class president had come up from a score of 47 to 82. EK with 77, EBB with 73, and EE with 72 were also high. All of these individuals were seemingly well-adjusted, friendly, thoughtful, and helpful girls. The most popular boy was EQQ with 69 points. The boy-girl cleavage which still existed to some extent in this group caused the boys, outnumbered as they were by the girls, to receive correspondingly lower acceptability scores.

Attitude and Acceptability Scores in the Control Group. The average attitude and acceptability score for the control group was 23.40 and 21.82, or a loss of a little more than 1 point; see Table XX. The standard

deviations were 16.64 and 22.04 on the pre-test and final test, respectively. This showed a marked heterogeneity in the attitude score on the pre-test and an even greater extreme on the final test. The Standard deviations of the control group's acceptability score were almost the same on the final test as they had been on the pre-test, i.e., 16.75 and 22.05, respectively. The standard deviation on the control group's final test acceptability score was lower than that of the experimental group. That is, the initial acceptability scores of the control group were a little more homogeneous than those of the experimental group, but at the end of the semester the standard deviation of the acceptability scores for the control group had become decidedly more extreme.

In the control group there were 5 negative attitude scores recorded on the first test. These were made by CA, CL, CS, CDD and CJJ. The only one not mentioned in this discussion previously is CL who was the oldest girl in the class. CL was a very poor student, but she responded to working under the close supervision of the teacher. In the final test 7 pupils, CF, CFF, CGG, CHH, CII, CPP, and CW, had low attitude scores, but none were as low as CW's -20. All have been described before except CGG who was the only Mexican boy in the class and

interested in devious ways of getting out of work. His best pals were CE and CW who both had low attitude scores. Of those having low attitude scores on the pre-test, CL was the only one with a negative acceptability score on the test. Although her attitude score had increased on the final test, she continued with a negative acceptability score to the extent of 9 fewer points, or -18. CF and CJ also had negative acceptability scores on the pre-test and CO and CM had zero acceptability. CJ was a girl of obese proportions, poor posture, and she seldom had a smile for anyone except CM. CM was the only classmate who received CJ's 3-point choice in the first test and also the final test. CM was new to the community that year, and she gave her only 3-point choice to CL on the pre-test and reciprocated her only 3-point choice with CJ on the final test. These same individuals figure largely as the negatively accepted members of the class on the final test. CE, CJ, CL, CM, CO, CBB, CFF, CGG, CMM and CRR had negative acceptability from their classmates on the final test. The last 5 pupils did not have negative or zero acceptability scores on the pre-test, but developed them by the end of the semester. CBB, CMM and CRR have not been described previously. All three exhibited negative attitudes at one time or another in the class. CBB and CRR did not participate

in amateur shows; they contributed very little, if anything to class discussions. These particular girls needed help, and they likely would have profited by the group-self study project carried on in the experimental group. The highest attitude scores on the control group's pre-test were those of CD and CRR. The former, a boy with a cheerful outlook, has not been mentioned before. Because of his faculty for getting himself involved in conflicts with other children, his acceptability score was lowered considerably in the final test. The high attitude score on the final test was recorded again by CRR who evidently held no grudges, and who indicated that she knew all the pupils in the class. The highest acceptability score was secured by CLL on the final test. CCC came next in acceptability. CLL was a brilliant girl of considerable talent, younger than the average in the group, but her sparkling personality won for her many friends. CCC was the class president, a boy with a quick temper, but with many helpful suggestions for the group.

Coefficients of Correlation. Consideration of the sociometric data can also be made by examining the coefficients of correlation. Such correlations were made of the data from the sociometric tests in terms of the Pearson product-moment; see Tables XXI to XXIII.

TABLE XXI

RELATIONSHIP OF RETRIBUTIVE REACTIONS OF EXPERIMENTAL GROUP ON PRE-TEST AND FINAL TEST

Reactions	N	Pre-Test r	Final Test r
Rejections (RS) and Rejected (RD)	47	-.15	-.02
Choices (CS) and Chosen (CN)	47	.39	.06
?'s Given (?G) and ?'s Received (?R)	47	.51	.16
Attitude (AT) and Acceptability (AC)	47	.18	-.02

TABLE XXII

RELATIONSHIP OF RETRIBUTIVE REACTIONS OF CONTROL GROUP ON PRE-TEST AND FINAL TEST

Reactions	N	Pre-Test r	Final Test r
Rejections (RS) and Rejected (RD)	45	.01	.16
Choices (CS) and Chosen (CN)	45	.27	.15
?'s Given (?G) and ?'s Received (?R)	45	.01	-.24
Attitude (AT) and Acceptability (AC)	45	.20	.20

There was little relationship between the rejections given and the rejections received for pupils of the experimental group on their pre-test (-.15) and final test (-.02); see Table XXI. The slight relationship that

TABLE XXIII

RELATIONSHIP OF SCORES ON THE SAME REACTIONS ON PRE-TEST AND FINAL TEST FOR EXPERIMENTAL AND CONTROL GROUPS

Reaction	Experimental Group		Control Group	
	N	r	N	r
Rejections of Classmates	47	.47	45	.45
Choices of Classmates	47	.76	45	.77
?'s Given to Classmates	47	.23	45	.94*
Attitude Score	47	.69	45	.81
Rejections Received	47	.21	45	.17
Choices Received	47	.64	45	.45
?'s Received	47	.33	45	.70**
Acceptability	47	.81	45	.87

* Significant at 1% level.
** Significant at 5% level.

did exist was negative. Those pupils who made rejections, then, were not likely to be rejected to the same extent. Some of those who were seeking popularity and gave few if any rejections were likely to receive many rejections from their classmates. There was almost no consistency of pattern in the final test. The correlation of rejections given and received in the control group also showed no relationship in the pre-test (.01) and slight relationship in the final test (.16).

There was considerably more relationship (.39) shown between the number of choices made and the number of times chosen on the pre-test for the experimental group. For this same test the control group showed a relationship of .27. By the end of the semester it seemed, however, that those who were choosing were not necessarily chosen to the same extent. The correlation was .06 in the experimental group and .15 in the control group. This revealed slightly more relationship between the number of choices a pupil made and the number of times he was chosen in the control group.

A still higher correlation (.51) was found between the number of question marks given and the number of question marks received in the experimental group's pre-test. This relationship was influenced especially by the strangers to the group who gave question marks and received them to about the same extent. After the members of the group became acquainted with each other the correlation changed to .16. This would tend to indicate that those who did not know many of the members of their class were nevertheless known by a fairly large proportion of their classmates. In the control group there was a negligible correlation between those who gave question marks and those who received them on the

pre-test (.01), but by the end of the semester there was a small negative relationship (-.24) between them.

When the attitude and acceptability scores were correlated, the experimental group (.18) and the control group (.20) were found to be similar. But those who had high attitude scores were only in a few cases, the correlation tends to indicate, the same individuals with high acceptability scores. This same relationship (.20) existed for the control group on the final test, but the relationship was of very little consequence in the experimental group for the final test (-.02). The minute relationship that did exist was negative. Thus, it may be concluded that a little more consistency in opinions was exercised in the control group while there was some indication of influence toward change in the group making the self-study.

Another set of correlations was made of the scores for the same reaction on the pre-test and final test for both groups; see Table XXIII. When the correlations of the rejections made of classmates in the pre-test and final test for the experimental and control groups were examined, they were found to be similar (.47 and .45, respectively). There is considerable relationship between the number of rejections given on the pre-test and the number of rejections given on the final test in both groups.

The number of choices made on the pre-test and final test were decidedly more consistent in both the experimental and control groups (.76 and .77, respectively). Thus, those individuals who made a large number of choices on the pre-test were also likely to make a large number of choices on the final test in both groups.

The number of question marks given on the pre-test and on the final test were not highly related in the experimental group (.23), but they were very highly related in the control group. This would tend to indicate that those not knowing many in the group self-study at the beginning of the semester learned to know their classmates by the end of the semester. In the control group those who did not know many of their classmates at the beginning of the semester still did not know a very large number of them at the end of the semester.

The attitude score on the pre-test and final test correlated rather highly for the experimental group (.69) and even more highly for the control group (.81). This affords evidence that a pupil's attitude toward his classmates does not change to a very great extent in one semester, but that the group self-study had a noticeable influence in changing attitudes.

Those pupils who were rejected on the pre-test were not consistently rejected on the final test in both the experimental and the control groups (.21 and .17, respectively). Thus, both groups changed considerably between the beginning and the end of the semester on their number of rejections, but the control group made a slightly greater change, which could be attributed to chance.

There was considerable relationship between those chosen on the first test and the extent to which they were chosen on the final test in the experimental group (.64) and in the control group (.45). A higher correlation was shown in the experimental group than in the control group.

Not all the persons who were unknown at the first of the semester in the experimental group remained unknown throughout the semester according to the correlation received (.33). But those unknown in the control group tended to remain unknown at the end of the semester (.70). Although the number of unknowns was greatly reduced in both groups, see Tables XI to XIV, the experimental group was able to effect a greater change in making the unknowns known to the group.

The acceptability scores received at the beginning and the end of the semester were similar in both the

experimental and control groups (.81 and .87, respectively), but here again there was slight change noticeable in the experimental group. This would agree with other studies in sociometrics which show high consistency of acceptability status. Thus, no matter what the acceptability score, high, medium, or low, at the beginning of the semester, it tended to remain near that level at the end of that semester for pupils in the control group.

Covariance. Statistical techniques have been used in this study to arrive at a mathematical means of representing the actual relationships which exist in the sociometric performance. The covariance method[1] was employed to gain increased precision in the test of significance, for the two groups before the experiment began did not differ significantly in any respect measured. By employing the covariance method it was possible to use the data from the two groups in their entirety. No child was omitted from this study as is often necessary in studies of paired individuals. "With groups differing

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[1] Palmer O. Johnson, Statistical Methods in Research, New York: Prentice Hall, Inc., 1949, pp. 246-261.

Quinn McNemar, Psychological Statistics, New York: John Wiley and Sons, 1949, pp. 318-330.

George W. Snedecor, Statistical Methods, Fourth Edition; Ames, Iowa: The Iowa State College Press, 1948, pp. 318-339.

on an uncontrolled variable," McNemar writes, "it is not only as proper, but also as necessary to use the covariance technique when the groups are different. For such situations the adjustment will increase the between groups variance."[2] Sociometric authorities have warned that in the most complex patterns of interrelationships "statistical treatment may tend to over-simplify the procedure and data to such a degree that the resulting statistical findings become impermissible and unscientific."[3] The nature of our study, however, does not warrant the acceptance of this criticism.

To determine if the group self-study, the variable factor, had effected a change in the sociometry ratings of the pupils in the experimental group, it was necessary to find out if there was a difference between these two groups on the sociometric tests. The next problem to be determined was whether or not this difference, if there was a difference, was significant. It was recognized that there was no significant difference between the two groups in age, occupation of parents which was related to the socio-economic background, scholastic average, intelligence quotient, and music mark.

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[2] Quinn McNemar, op. cit., p. 329.

[3] Moreno and Jennings, "Statistics of Social Configuration," op. cit., p. 346.

The hypothesis accompanying the covariance technique was that there was no difference between the experimental and control groups. Computations of the analysis of covariance for the reactions on the sociometric tests were made and are found on Tables XXIV to XXXI. In the computation there was one variable, and y represented the final sociometric score and x the initial score.

The F was found to be significant at the 1 per cent level and the hypothesis that the two groups were alike was rejected in the case of each of the following reactions: rejection made of classmates, Table XXIV; choices made of classmates, Table XXV; attitude score, Table XXVII; rejections received, Table XXVIII; choices received, Table XXIX; question marks received, Table XXX; and acceptability score, Table XXXI. Since a significant difference existed with other factors considered constant, we were led to assume that this difference between the experimental and control groups could be attributed to the only variable factor--the self-study project.

But the difference in the two groups concerning the question marks given, classmates unknown to the pupil, was too slight to be significant. The hypothesis that there is no difference between the two groups in this respect had to be accepted. The results, assuming that the children followed the directions in their use of

TABLE XXIV

ANALYSIS OF COVARIANCE OF REJECTIONS MADE OF CLASSMATES BY PUPILS IN EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	D.F.	Σy^2	Σx^2	Σxy	Adjusted and Reduced				
					D.F.	S.S.	M.S.	F	Hypothesis
Within Groups	90	8368.32	5218.05	2835.88	89	6827.09	76.71	-	-
Between Groups	1	3271.42	658.66	1467.92	1	1660.77	1660.77	21.65*	Rejected
Total	91	11639.74	5876.71	4303.80	90	8487.86			

* Significant at the 0.1% level of confidence.

TABLE XXV

ANALYSIS OF COVARIANCE OF CHOICES MADE OF CLASSMATES BY PUPILS IN EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	D.F.	Σy^2	Σx^2	Σxy	Adjusted and Reduced				
					D.F.	S.S.	M.S.	F	Hypothesis
Within Groups	90	8411.86	6797.24	4311.82	89	5676.66	63.78	-	-
Between Groups	1	3997.31	528.42	1453.36	1	2195.40	2195.40	34.42*	Rejected
Total		12409.17	7325.66	5765.18	90	7872.06			

* Significant at the 0.1% level of confidence.

TABLE XXVI

ANALYSIS OF COVARIANCE OF CLASSMATES UNKNOWN TO PUPILS IN EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	D.F.	Σy^2	Σx^2	Σxy	Adjusted and Reduced				
					D.F.	S.S.	M.S.	F	Hypothesis
Within Groups	90	975.53	9279.29	540.58	89	944.04	10.37	-	-
Between Groups	1	8.21	150.47	-35.15	1	12.61	12.61	1.22	Accepted
Total		983.74	9429.76	505.43	90	956.65			

TABLE XXVII

ANALYSIS OF COVARIANCE OF ATTITUDE SCORES OF PUPILS TOWARD CLASSMATES IN EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	D.F.	Σy^2	Σx^2	Σxy	Adjusted and Reduced				
					D.F.	S.S.	M.S.	F	Hypothesis
Within Groups	90	31599.22	18982.21	14236.42	89	20922.08	235.08	-	-
Between Groups	1	14376.90	2242.52	5678.07	1	6368.91	6368.91	27.09*	Rejected
Total	91	45976.12	21224.73	19914.49	90	27290.99			

* Significant at the 0.1% level of confidence.

TABLE XXVIII

ANALYSIS OF COVARIANCE OF REJECTIONS RECEIVED FROM CLASSMATES BY PUPILS IN EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	D.F.	Σy^2	Σx^2	Σxy	Adjusted and Reduced				
					D.F.	S.S.	M.S.	F	Hypothesis
Within Groups	90	3872.32	1764.05	2105.88	89	1358.38	15.26	-	-
Between Groups	1	3271.42	658.68	1467.92	1	512.59	512.59	33.58*	Rejected
Total	91	7143.74	2422.73	3573.80	90	1870.97			

* Significant at the 0.1% level of confidence.

TABLE XXIX

ANALYSIS OF COVARIANCE OF CHOICES RECEIVED FROM CLASSMATES BY PUPILS IN EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	D.F.	Σy^2	Σx^2	Σxy	Adjusted and Reduced				
					D.F.	S.S.	M.S.	F	Hypothesis
Within Groups	90	3889.86	4773.24	3108.82	89	1729.29	19.43	-	-
Between Groups	1	3997.31	528.42	1453.36	1	2232.04	2232.04	114.87 *	
Total	91	7887.17	5301.66	4562.18	90	3961.33			

* Significant at the 0.1% level of confidence.

TABLE XXX

ANALYSIS OF COVARIANCE OF PUPILS UNKNOWN TO CLASSMATES IN EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	D.F.	Σy^2	Σx^2	Σxy	Adjusted and Reduced				
					D.F.	S.S.	M.S.	F	Hypothesis
Within Groups	90	281.53	3043.39	516.58	89	193.84	2.18	-	-
Between Groups	1	8.21	150.47	-35.15	1	23.33	23.33	10.71*	Rejected
Total	91	289.74	3193.86	481.43	90	217.17			

* Significant at the 1% level of confidence.

TABLE XXXI

ANALYSIS OF COVARIANCE OF ACCEPTABILITY SCORE OF PUPILS IN EXPERIMENTAL AND CONTROL GROUPS

Source of Variation	D.F.	Σy^2	Σx^2	Σxy	Adjusted and Reduced				
					D.F.	S.S.	M.S.	F	Hypothesis
Within Groups	90	36686.22	29306.21	27153.42	89	11527.45	129.52	-	-
Between Groups	1	14376.90	2242.52	5678.07	1	5369.26	5369.26	41.45*	Rejected
Total	91	51063.12	31548.73	32831.49	90	16896.71			

* Significant at the 0.1% level of confidence.

the question mark, tend to show that whether or not a pupil recognized a classmate's name as someone he knew would occur without regard to the self-study project.

This study of four months showed evidence of remarkable change. On the whole it would seem that the instructional materials and the experiences of the children employed in the self-study project were assimilated to such an extent that they were meaningful in changing behavior in the children.

The Fourth Sociometric Test. It will be recalled that a fourth sociometric test was administered the same week as the third test based on a question concerning the pupil's choice of classmates to sing with on the final examination; see Tables XV and XVI. The means and standard deviations of the data from this test are given in Table XXXII.

There were fewer rejections made in the experimental group according to the mean (7.21) than in the control group (18.93) and the standard deviations (7.32 and 8.28, respectively) indicate that there was about the same range of spread in rejections made in both groups. More choices were made in the experimental group (37.83) than in the control group (23.62). There was less variance in the number of choices made in the experimental (7.62) than in the control group (10.43).

TABLE XXXII

MEANS AND STANDARD DEVIATIONS OF REACTIONS OF EXPERIMENTAL AND CONTROL GROUP ON FOURTH SOCIOMETRIC TEST

Reaction	Experimental Group		Control Group	
	Mean	S.D.	Mean	S.D.
Rejections	7.21	7.32	18.93*	8.28
Choices	37.83	7.62	23.62*	10.43
?'s Given	0.96	1.91	1.44	4.04
Attitude	44.32	14.76	17.47*	20.34
Rejected	7.21	6.02	18.93*	6.55
Chosen	37.83	6.52	23.62*	8.63
?'s Received	0.96	1.21	1.44	1.17
Acceptability	44.32	18.45	17.47*	25.41

* Significant at 0.1% level.

There were theoretically a few less unknown in the experimental group (0.96) than in the control group (1.44) and the standard deviation was smaller (1.91 and 4.04, respectively). There was a decided difference in the attitude scores. The mean of the experimental group (44.32) was much higher than the mean attitude score of the control group (17.47). The standard deviations in both groups were large, but there were fewer extremes in the experimental group (14.76) than in the control group (20.34). The standard deviation of the rejections which

pupils received from classmates was lower in both groups than the standard deviation of the rejections given (6.02 and 6.55, respectively). The standard deviations of choices received by classmates showed a smaller range (6.52 and 8.63, respectively) than these same choices when considered from the point of view of the pupils making the choices. The numbers indicated as unknown by classmates were very nearly the same in both the experimental and control groups. The standard deviations were lower (1.21 and 1.17, respectively) than were the standard deviations accompanying the giving of question marks by each pupil to his classmates. All the standard deviations were smaller when the classmates' reactions were taken except in the case of the acceptability scores. The standard deviations of the acceptability scores for the experimental group (18.45) and for the control group (25.41) were larger, respectively, than the standard deviations of the pupils' attitude toward their classmates.

A correlation was made of the scores on the third and fourth sociometric tests which were administered within the same week; see Table XXXIII. In the case of every reaction the correlation of the third and fourth test was higher except for the unknowns. Giving (.69 and .55) and receiving (.74 and .68) question marks showed

TABLE XXXIII

COEFFICIENT OF CORRELATION OF REACTIONS ON THE THIRD AND FOURTH SOCIOMETRIC TESTS FOR EXPERIMENTAL AND CONTROL GROUPS

Reaction	Experimental Group r	Control Group r
Rejections	.56	.73
Choices	.56	.80*
?'s Given	.69	.55
Attitude	.55	.76
Rejected	.85	.86
Chosen	.88	.93
?'s Received	.74	.68
Acceptability	.90	.96

* Significant at the 5% level.

higher correlation in the experimental group. This may have been due to the effect of group self-study on the scores. The pupils in the experimental group were able to select with more discrimination those who were best suited to singing in their groups, while the control group was still operating on popularity. In the correlations of rejections (.56 and .73) there was considerably less relationship in the experimental group. This was true also with regard to correlations of choices made (.56 and .80). The attitude score of the third and fourth tests for the experimental group likewise showed

less relationship (.55 and .76). But the correlations of rejections received were much higher and more nearly alike (.85 and .86). The correlations of the choices made by classmates were exceedingly high, especially in the control group (.88 and .93). But the highest correlations for both groups were in the acceptability scores (.90 and .96). The high coefficient of correlation on the third and fourth tests may reflect memory to some extent, but certainly consistency and stability were revealed.

As far as the test can be trusted to reveal the opinion of the singing talent of the group, EK was considered the "singing star" of the experimental group; see Table XV. EE and EGG were next. No one in this group was considered a "singing isolate," for there were no negative acceptability scores. However, EUU, ENN, EHH and ED were rejected most often and had the lowest acceptability scores. The problems which each of these individuals had to overcome to be accepted socially have been presented earlier. The attitude scores for EUU, EHH and ED, it will be noticed, were high. Even ENN's attitude score, which was lower than the other three of this group, was above the average for the entire experimental group. Why did EE and EK, the two most highly accepted individuals in the class, exert

their right to reject to such a great extent? They perhaps were using the test as a means of assuring themselves of exclusive singing groups. It appeared that they might have exchanged ideas on the matter of choosing and rejecting, for they accepted very nearly the same individuals.

The singing star of the control group, according to the test data, was CLL and next high was CU; see Table XVI. There were twelve negative acceptability scores. This gave an indication of the extent to which some members of the group were deprived of the opportunity to participate.

The seriousness of the situation presented by these 12 negatives in a class of 45 was not easy to estimate. From mere numbers one was not able to grasp the profoundness of the implication. When the individuals identified by these negative scores were associated with the live girls and boys whom they represented, it was seen that 24 per cent of the control class was virtually ostrasized in the midst of an abundance of potential friends. They could not help but feel the loneliness, the lack of understanding, the coldness, and even the cruelty these numbers imply although it was far from apparent in the general operation of this classroom that this human tragedy existed. What these individuals might have contributed

to the group was not sought by their classmates; some of them likely experienced ridicule from the very classmates they sought as friends. The topic of human conservation was suggested by this situation. When it was discovered what was happening in this class, and one might assume that these same pupils were meeting similar circumstances throughout the entire school day, there is no reason to wonder at some of them turning to socially unaccepted means of building themselves up in their own estimation. It was probable that some of these boys and girls with negative acceptability scores had friendships outside of the classroom which gave them gratification, but that did not take care of their acceptance in this particular vocal music classroom. Can a class be expected to function effectively with 24 per cent of the pupils ignored by their classmates?

Relationship of Acceptability Status to Selected Factors. Questions concerning the acceptability status of a pupil and its relationship to his intelligence score, scholastic average and music mark were answered by a series of correlations; see Tables XXXIV and XXXV.

The intercorrelation of scholastic average, intelligence score, and music mark were high, ranging from .73 for intelligence score and music mark in the experimental group to .92 for scholastic average and music mark

TABLE XXXIV

INTERCORRELATION OF SCHOLASTIC AVERAGE, INTELLIGENCE SCORE, AND MUSIC MARK AND THEIR RELATIONSHIP TO ACCEPTABILITY STATUS IN THE EXPERIMENTAL GROUP

	Intelligence Score	Music Mark	Pretest	Acceptability on Final Test	Acceptability on "Singing" Test
Scholastic Average	.77	.89	.58	.61	-
Intelligence Score		.73	.44	.56	-
Music Mark				.64	.68

TABLE XXXV

INTERCORRELATION OF SCHOLASTIC AVERAGE, INTELLIGENCE SCORE, AND MUSIC MARK AND THEIR RELATIONSHIP TO ACCEPTABILITY STATUS IN THE CONTROL GROUP

	Intelligence Score	Music Mark	Pretest	Acceptability on Final Test	Acceptability on "Singing" Test
Scholastic Average	.75	.92	.63	.79	-
Intelligence Score		.77	.49	.64	-
Music Mark				.78	.78

in the control group. At the time the pre-test was taken the pupils were more or less aware of some of their classmates' reputations as to scholastic ability. It was evident by the correlations presented on Tables XXXIV and XXXV that there was a decided positive relationship between the pre-test acceptability score and the scholastic average. The correlation was slightly lower in the experimental group (.58) than in the control group (.63). With the final test the scholastic average showed even higher correlation although the relationship was still not as great (.61) in the experimental group as in the control group (.79). Is it possible that for lack of other values upon which to base discrimination, the members of the control group were using school marks as a basis for their choices?

The intelligence score, which is presumably not known to the pupils, also shows considerable relationship to the pre-test acceptability ratings (.44 and .49). This could of course be expected from the fact that intelligence score and scholastic average are usually highly correlated. But the correlation of intelligence score and the final acceptability scores was almost as high (.56) in the experimental group as the relationship found between the scholastic average and pre-test acceptability had been. In the control group the correlatic

of intelligence score and the final acceptability score was higher (.64) than had been the relationship of the scholastic average and pre-test acceptability. Can we accept this as evidence that pupils of greater intelligence were using their intellectual ability to make themselves more acceptable to their classmates?

In the experimental group the music mark showed more relationship to the "singing" acceptability score (.68) than to the final test (.64), but in the control group the final test and the "singing" acceptability correlated with the music mark to the same extent (.78). The question on what the children of the control group were basing their choices of classmates again arose. Could the scholastic average and music mark have been of such tangible consequence to these pupils that they were willing to accept these as qualities of desirable worth leading toward the only realistic gain they found in making choices among their classmates? The lower correlations in the experimental group between the acceptability scores and the scholastic average and music mark would tend to indicate that other values had entered which were helping to determine their choices of friends.

C. Report on the Results of the Group Self-Study

This report must necessarily be presented in an informal way, for there was no attempt made to control the discussions or standardize the behavior of the pupils making the group self-study.

That adult groups have grown in their ability to work together more efficiently was known. The assumption behind the group self-study project was that seventh grade children, too, could learn to be objective about problems that concerned the entire group, that they would feel a need for formulating values which could be acted upon for the benefit of the group, that they could improve the human relationships within their group, and that they would be able to take steps toward the improvement of their situation through group action.

It was recognized that the behavior of the children in both the experimental and the control groups was typical of seventh grade classes. Both groups were interested in activity, and they were easily influenced by the suggestions of a recognized leader. They could endure hard work and even considerable personal inconvenience in the attainment of a goal which they accepted. They were able to control most of the members of their group by group censorship and approbation. The emotions of the seventh graders were characterized by extreme

range; the pupils were, as a whole, sensitive and responsive. Sympathy was easily aroused, and most of the girls were interested in the romantic element of whatever they experienced. Both groups included some poised individuals, as well as many pupils who exhibited considerable thoughtless behavior and the ignoring of accepted courtesies.

At the beginning of the semester if the appearance of some child did not meet the particular standards of the group that happened to be in vogue, the child was spoken of as a "drip" by classmates and was left alone. Some of the smaller boys who felt ignored tried to gain attention by being "funny" and perpetrating irrelevant distractions. This was disgusting behavior to some of their classmates. There was evidence that unwritten laws existed which demanded conformity or exclusion from acceptance.

The seventh grade boys and girls in the experimental group did not disguise their natural eagerness for practical helps on traits leading to popularity and their making more friends. This of course led directly to the consideration of constructive values, the recognition of the privileges and obligations of the members of a group, and the possibility of personal- and social-adjustment in accord with recommended mental hygiene practices.

The topics were discussed freely and frankly in the group. There was no evidence of any feeling of hurry to cover a certain amount of material, but regret that the subject had to be discontinued so soon was usually expressed verbally by someone in the group when the discussion period for the week was over. The teacher, however, was usually conscious of the large number of children in the classroom who revealed by their facial expressions that they could have been drawn into the discussion, but who, for the lack of time, were unable to make a verbal contribution each time. By the end of the semester every child was voluntarily responding at the verbal level to the topic under consideration. At the beginning of the semester only a few children accepted the challenge of the discussion, although interest in the topic was expressed in other forms, such as attentive listening, support given to decisions, and smiles of encouragement to the various participants. A noted change in the responses took place during the semester. There was a lessening of the "my mother says" type of remark as a finality and more of the "I have heard my family say, but/and I believe . . ." type of statement by the end of the semester.

Parts of chapters of books read to the class were found to be less stimulating as a means of arousing

discussion than stories of happenings in the school and short articles pertinent to the topic. The following is an example of the type of material that elicited the most enthusiastic response from the group. The teacher made this observation:

> Yesterday I saw four girls in the hall whom I know are good friends. They were occupied in conversation, but there were times when each looked away from the group so that she could have spoken to others passing by in the hall. But no matter who came by these four would not speak. In fact, they are known to speak to only the ones in their own little group. What do you think of this situation?

This was part of the discussion on the fourteenth week on the making and keeping friends described in Chapter IV. The group had made its decision and the following day one of the boys came excitedly into the room, all smiles. "It worked!" The teacher's question as to what worked brought a somewhat incoherent report from the boy concerning his meeting the student-body president in the hall. He continued, "I smiled at her, and she smiled back and said, 'Hello.' Why, she doesn't even know me. It was so easy, I'm going to try it on others."

The discussion of what makes "other junior high school boys and girls like yourself" give ear-splitting yells in the cafeteria and quarrelsomeness was considered in relationship to the release of emotional tension and frustration. There was no apparent difficulty on the part

of the pupils in handling this new conception at the verbal level.

When the graduate student from India came into the class the children recognized at once that here was a remarkably fine person. Any opinions the pupils had held about "all Indians from the Orient" are this or that were seemingly dropped after they had talked with this Indian lady of wide understanding. The injustice of branding any one person for a generalized opinion about a group or a part of the country from which he came seemed to meet no resistance from the group. At this same time it was also pointed out that from the charm of this one person it could not be accepted that all persons of her group had these qualities and characteristics. This was an opportunity to stress the likenesses of people, and remarks were avoided which might have led the pupils to strengthen their feelings on how people differ.

The teacher's assistance was usually found necessary in making generalizations and in encouraging the group in its efforts to carry out its decisions. This encouragement was not necessary in all cases, but in the passing of time a few pupils returned to their old patterns of behavior. Then it was that the adult's longer range view point was sometimes sought.

Of the 47 members of this class 8 reported on the final examination that similar topics had been discussed in other classes in the school. These classes were (1) social studies where some of these topics were mentioned in connection with the policy of the United States in the treatment of other countries; (2) home economics with respect to etiquette and good grooming; (3) English in connection with the proper way to make introductions; and (4) one home room. Thirty-four different items were summarized in a list of what the experimental group liked best about the vocal music class. Second popular on the list which was headed by "singing popular music" was "sitting by my friends."

The comments taken from the pupils' final examination gave approval to the self-study project in all cases except that of EV, the child who was seldom in school because of the lack of cooperation in the home. She wrote on her paper, "I wasn't here much when we descust it." One other child wrote, "I don't like it very much, but it is O. K., but I think the kids next year should have it." Comments more representative of the group opinion were:

> I think it was very worthwhile. It did me a lot of good.
>
> I think it was very valuable, because maybe someone here was like that and after we talked about it, they wouldn't do it anymore.

It helped me to get along with other people.

I'm glad we discussed it, because it makes me realize how I should react to these things.

It meant a great deal to me. Because a kid's school life is based more on this than just plain school work.

It did me some good because I used to get in so many fights and this year I don't get in too many.

I think that the people of your next year class would like to hear about these things we have talked about.

There were hopeful indications, as demonstrated in the change in the sociometric ratings, that the experimental group had grown considerably in their concern for others in the classroom, that they had widened their acceptance of others for the contribution that others were able to make to the group, and that some aspects of better human relations in the classroom had taken place. The study had not been forced on the pupils, but their interest was evidence that they regarded learning how to live happily with others as important. It was recognized during the study that various approaches to this subject matter were necessary, for there are ranges of individual differences in learning this type of material comparable to those found in learning academic subjects. Each child has his own rate of learning the relationship of his needs, interests, attitudes, and ambition to those of the group. Vocal music has much to

offer toward the socialization of the pupil in the class. But the accumulation of detail and tradition will have to be sifted to reveal the essential values which contribute to the personal and social growth of the seventh grade pupil.

It was evident from this study that every child should have a sense of belonging to his class group, of being wanted in it by the others, and of being able to contribute to that group. Girls and boys of the seventh grade can become more skilled in using group methods, especially group decision. They can appraise their own capabilities, learn to accept themselves and each other, and to enjoy the combination of the contribution all can make to the group. There is nothing passive about this approach, it should be recognized; rather it utilizes all the effort and activity of the group in a positive direction.

D. Summary

Chapter V has presented the findings of this study in relation to the stated hypotheses. The data have been provided and the results obtained from statistical treatment have been set up in tabular form. These findings have been discussed and interpreted.

Informal appraisal of, and reactions to, the group self-study in the form of pupil comments and teacher observations have been submitted.

CHAPTER VI

SUMMARY AND CONCLUSION

A. Summary

This study was undertaken to determine the effect of a group studying its own needs on the sociometric ratings of the members of that group. The sociometric ratings were made of 47 pupils composing the group studying its own needs and 45 pupils composing the control group. These two groups were members of two 7A vocal music classes in an actual school situation.

What appear to be important findings may be summarized as follows:

1. There was a significant increase in the number of sociometric choices made between the pre-test and final test in the group making the self-study over the control group.

2. Although the number of unknown individuals indicated sociometrically was greatly reduced in both the experimental and the control groups between the pre-test and the final test, the extent of difference in the reduction can be regarded as having occurred by chance alone.

3. The rejection of other individuals in the group was increased in both groups, but to a greater extent, though not significantly greater, in the control group.

4. The difference between the experimental and control groups on all sociometric reactions was found to be significant at the 1 per cent level of confidence or better except for the decrease in the number of individuals indicated as unknown by the members of the groups.

5. The correlation of retributive reactions (rejections given with rejections received, choices given with choices received, etc.) on the sociometric tests were low except for the question marks given and received on the pre-test for the experimental group. This coefficient of correlation was .51. Choices given and received in the experimental group on the same test correlated .39 and in the control group .27.

6. Such factors as intelligence score, scholastic average, and music mark had more relationship to the sociometric acceptability score on the final sociometric test of the individuals in the control group than of those in the experimental group.

7. The mean of the correlations between the reactions on the third and fourth sociometric tests was .72 for the experimental group with correlations ranging from .55 on the attitude score to .90 on the acceptability score. The mean correlation for the control group was .78 with correlations ranging from .55 on the question marks given to .96 on the acceptability score.

B. Conclusions

In formulating the statements which indicate refutation or acceptance of the hypotheses, the findings primarily from the pre-test and final sociometric test have been used as a basis. The hypotheses will be restated in this section.

Hypothesis I. The social status of the members of a group can be measured in such a way that the sociometric scores of the entire group can be used in comparing this group with other groups.

This hypothesis can be accepted. The merits of the sociometric test as an instrument for measuring the social relationships of members of a group is no longer questioned. Sociometric findings for some time have been based on quantitative measures. With the sociometric test used in this study the total reactions for each class, as well as scores for individuals, are made available, and these scores and totals can be used in making comparisons. From these scores the trends in group reactions can be expressed in per cents, measures of central tendency, and variability. Correlations can be made between scores of the tests to show retributive reactions. Correlations can also be made with other quantitative factors, such as intelligence score, scholastic average, and age. These sociometric scores can also be utilized in comparing the social status of entire groups.

Hypothesis II. The social status of the members of a group can be improved by the individuals themselves studying the needs of their group and making appropriate personal and social adjustments.

This hypothesis has also been verified on the basis of the findings. This study shows that in every reaction except that of classmates unknown to the pupil a significant difference exists between the sociometric rating of the group making the self-study and the control group representing the usual classroom situation. The groups were compared in seven other respects: rejections given and received, choices given and received, question marks received, attitude and acceptability scores. There was a difference significant at the 1 per cent level of confidence in each of these seven reactions. It is reasonable to believe that a similar study could be carried on with approximately comparable results using a pair of seventh grade classes in any other subject matter area in a junior high school. All classes should offer the same opportunity for group belongingness and a learning situation that will further group-experiences and good inter-human relationships

The improved social status of the individuals in the experimental group over that of those in the control group, it can be assumed, would not have happened automatically or by chance. To make inferences about what happened to cause this change in the sociometric ratings of

the members of the experimental group is outside the scope of this study. This study, it will be recalled, was designed to see if a change in sociometric ratings would take place, and to determine if the difference, should it occur, was significant.

This study shows that seventh grade children are sufficiently mature to understand some of the elements of improving human relationships. Since these boys and girls show an impelling interest in discovering the various aspects of personality and character, group relationships and social interaction, surely no one would fail to recognize the appropriateness of taking advantage of this opportunity to make these children more aware of those characteristics which constitute the well-adjusted personality, the innate needs and social responses common to themselves and others. While many children of this age seem to lack the expected inner motivation for the traditional academic learning, they, almost without exception, manifest a vital concern for social learnings. Teachers who feel that they have an obligation and responsibility toward children in helping them solve their group relations problems, but who also feel that there is not enough time to aid the children individually, will perhaps be able to use some of the ideas presented in this study.

Hypothesis III. The social status of the members of a group will improve as the individuals learn to know a larger number of the other individuals in the group.

This hypothesis must be rejected for the average group. The findings show that when the individuals became better acquainted in the control group more rejections than choices were given these formerly unknown individuals. In the experimental group the hypothesis could be accepted, for as the pupils became better acquainted they accepted more of their classmates. In this study, then, simply knowing an individual was not synonymous with acceptance. Some other factor besides the individuals in a group knowing each other better enters into improved social status.

Hypothesis IV. More individuals will become known in those groups where the members of the group make a special effort to know each other.

This hypothesis must also be rejected on the basis of the findings of this study. Pupils in the two groups learned to know each other to about the same extent; the difference could be attributed only to chance. It can be assumed that the effort expended in learning the names of the members of the group at the beginning of the semester in the experimental group was wasted. The individuals would have learned each other's names to the same extent without the group self-study, if they had access to the class list as they did in this study.

Hypothesis V. Sociometrically an individual's attitude toward the other members of his group is similar to the esteem in which he is held by the other members of the group.

On the basis of the evidence provided by the data this hypothesis is to be rejected. Most correlations were near zero. The one high correlation was in the question marks given and received by the experimental group on the pre-test. There was some relationship shown between the choices made and the choices received on the same test. A little lower correlation was given for the same retributive reactions in the control group. Very little relationship is shown in other retributive reactions which suggests that the reactions which individuals indicate toward other individuals in the group are not those, for the most part, that these others extend to them.

Hypothesis VI. The acceptability status of an individual as measured by sociometric ratings is relatively stable.

On the basis of the evidence provided by the data this hypothesis can be accepted. When educed by the self-study project, the acceptability ratings of the individuals showed an increase in average acceptability score. The correlation between the acceptability score of the experimental group and the control group on the third and fourth

tests can be considered to show high consistency in acceptability status.

In conclusion it can be stated that the hypotheses initially presented in Chapter I of this study have now been subjected to rigorous statistical tests on the basis of evidence provided by the data. The statistical tests indicate significant differences at the 1 per cent and the 0.1 per cent levels of confidence for the relevant hypotheses. Certain commonly prevailing misconceptions were also deliberately set up as hypotheses to be tested. The data and statistical treatment indicate that these hypotheses must be rejected. The evidence from this study justifies the conclusion that the social status of a typical group can be significantly changed by the group's studying its own social needs and taking steps to implement its findings in appropriate social behavior.

Some implications of this study are these:

1. Improved pupil social acceptability is likely to result if pupils are more aware of those factors which constitute the fundamentals of good social adjustment.

2. Without objective measures even the most conscientious adult observers are oblivious and insensitive to some of the most influential social forces that are operating in the classroom.

3. The group making a deliberate effort to study its own social needs exerts a dynamic influence on its

members, and the individuals are stimulated to redirect their personal social behavior to bring it into harmonious adjustment with the group standards.

4. In the vocal music class or choral organization a more perfect singing ensemble is likely to result from the forthright recognition and conscious development of those factors which contribute to group adjustment.

5. The choral group could be expected to improve, as have other groups, in its ability to discuss, think through and carry out democratically conceived plans, with a resulting enrichment to all made possible through the larger recognition and utilization of the potentialities of the group.

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APPENDIX

TABLE XXXVI

EXPERIMENTAL GROUP PUPIL DATA SHEET

Pupil	Home Room	Intelligence Score	Scholastic Average	Music Mark	Elementary School	Parent's Occupation
EA	101	84	72	82	B	3
EB	200	128	92	96	F	6
EC	200	119	94	96	D	5
ED	101	90	70	71	E	2
EE	200	123	86	93	C	5
EF	200	95	86	82	J	5
EG	201	84	71	81	E	3
EH	201	100	80	90	J	7
EI	201	95	76	83	H	7
EJ	201	128	90	96	I	8
EK	201	109	94	97	F	7
EL	201	79	80	84	D	4
EM	201	114	84	85	F	5
EN	201	95	79	79	D	2
EO	201	97	86	91	J	7
EP	201	87	87	92	G	2
EQ	301	94	76	73	G	1
ER	301	126	91	91	A	8
ES	301	75	74	75	B	2
ET	301	103	76	78	D	4
EU	210	104	86	86	J	2
EV	301	74	60	65	G	4
EW	301	125	96	96	D	3
EX	210	97	84	84	J	5
EY	108	104	85	83	E	5
EZ	108	109	79	88	E	4

TABLE XXXVI (Continued)

Pupil	Home Room	Intelligence Score	Scholastic Average	Music Mark	Elementary School	Parent's Occupation
EAA	108	116	92	96	D	5
EBB	108	97	85	96	A	2
ECC	108	98	79	84	G	2
EDD	108	121	92	89	J	3
EEE	108	123	92	90	D	5
EFF	207	99	95	96	I	4
EGG	108	124	91	94	J	5
EHH	207	97	76	74	E	2
EII	207	97	84	81	J	3
EJJ	207	89	79	87	J	5
EKK	302	109	81	88	H	3
ELL	302	125	87	89	J	4
EMM	210	102	86	88	G	4
ENN	210	78	73	74	J	2
EOO	210	71	74	71	J	1
EPP	210	99	84	88	E	1
EQQ	210	109	98	96	A	1
ERR	210	86	79	81	J	5
ESS	210	118	95	92	A	5
ETT	210	109	95	98	D	7
EUU	201	82	72	72	E	7

TABLE XXXVII

CONTROL GROUP PUPIL DATA SHEET

Pupil	Home Room	Intelligence Score	Scholastic Average	Music Mark	Elementary School	Parent's Occupation
CA	200	98	91	90	D	1
CB	200	97	79	79	D	5
CC	200	95	84	82	C	2
CD	200	87	79	80	A	5
CE	200	82	78	71	E	1
CF	200	94	78	78	J	2
CG	200	107	90	89	J	5
CH	200	92	81	88	E	3
CI	200	84	80	83	A	5
CJ	201	101	75	79	J	2
CK	201	96	90	89	B	7
CL	201	60	58	60	A	2
CM	201	92	76	78	J	3
CN	201	134	96	98	D	7
CO	207	61	79	82	H	4
CP	301	113	86	92	D	5
CQ	301	114	91	96	D	6
CR	301	94	94	89	J	5
CS	301	83	72	71	E	8
CT	301	87	76	76	J	6
CU	301	141	97	97	D	6
CV	108	114	96	96	I	5
CW	108	94	75	71	E	4
CX	108	100	85	83	J	4
CY	108	97	91	93	I	6
CZ	108	102	85	91	F	3

TABLE XXXVII (Continued)

Pupil	Home Room	Intelligence Score	Scholastic Average	Music Mark	Elementary School	Parent's Occupation
CAA	207	131	97	99	D	7
CBB	207	73	61	59	D	2
CCC	207	129	92	97	A	5
CDD	207	120	95	96	J	8
CEE	207	95	84	86	I	8
CFF	302	86	76	77	H	2
CGG	302	74	79	72	E	1
CHH	210	100	76	79	J	2
CII	302	115	96	95	H	4
CJJ	302	140	84	85	B	6
CKK	210	93	79	84	C	3
CLL	210	129	98	96	D	5
CMM	210	87	78	73	I	2
CNN	210	93	84	80	D	6
COO	210	95	80	82	J	5
CPP	210	83	86	85	A	4
CQQ	210	100	95	96	H	7
CRR	210	86	79	77	J	2
CSS	210	120	96	94	E	5

TABLE XXXVIII

COMPUTATION OF MEAN AND STANDARD DEVIATION OF AGE OF CHILDREN IN EXPERIMENTAL GROUP

Age in Months	f	d	fd	fd^2
179	1	26	26	676
178	1	25	25	625
177		24		
176	1	23	23	529
175		22		
174		21		
173		20		
172		19		
171		18		
170		17		
169		16		
168		15		
167		14		
166		13		
165		12		
164		11		
163		10		
162		9		
161	2	8	16	128
160	1	7	7	49
159	2	6	12	72
158	1	5	5	25
157	1	4	4	16
156		3		
155	4	2	8	16
154	2	1	2	2

TABLE XXXVIII (Continued)

Age in Months	f	d	fd	fd^2
153	4	0	0	0
152	4	1	4	4
151	4	2	8	16
150	4	3	12	36
149	3	4	12	48
148	3	5	15	75
147		6		
146	3	7	21	147
145	1	8	8	64
144	3	9	27	243
143		10		
142	1	11	11	121
141		12		
140		13		
139	1	14	14	196
Totals	47		-6	3088

Mean = 153 + (-6/47) = 152.9 months = 12 years, 9 months

$$\text{Standard Deviation} = \sqrt{(3088/47) - (-6/47)^2}$$
$$= \sqrt{65.7021 - .0139}$$
$$= \sqrt{65.6882}$$
$$= 8.11 \text{ months}$$

TABLE XXXIX

COMPUTATION OF MEAN AND STANDARD DEVIATION OF AGE OF CHILDREN IN CONTROL GROUP

Age in Months	f	d	fd	fd^2
179	1	25	25	625
178		24		
177		23		
176		22		
175		21		
174		20		
173		19		
172		18		
171	1	17	17	289
170		16		
169		15		
168		14		
167	1	13	13	169
166		12		
165	1	11	11	121
164	1	10	10	100
163	1	9	9	81
162	1	8	8	64
161	1	7	7	49
160	1	6	6	36
159	2	5	10	50
158	1	4	4	16
157		3		
156	3	2	6	12
155	2	1	2	2
154	4	0	0	0

TABLE XXXIX (Continued)

Age in Months	f	d	fd	fd^2
153	2	1	2	2
152	4	2	8	16
151		3		
150	6	4	24	96
149	4	5	20	100
148	2	6	12	72
147	3	7	21	147
146		8		
145		9		
144	1	10	10	100
143		11		
142	1	12	12	144
141		13		
140		14		
139		15		
138		16		
137		17		
136	1	18	18	324
Totals	45		+1	2615

Mean = 154 + (1/45) = 154.02 = 12 years, 10 months

$$\text{Standard Deviation} = \sqrt{(2615/45) - (1/45)^2}$$

$$= \sqrt{58.1111 - .0004}$$

$$= \sqrt{58.1107}$$

$$= 7.6 \text{ months}$$

TABLE XL

FREQUENCY AND WEIGHTED SCORES RELATIVE TO CATEGORIES OF OCCUPATION OF PARENTS OF EXPERIMENTAL AND CONTROL GROUPS

Category	Experimental Group		Control Group	
	Number	Weighted Score	Number	Weighted Score
VIII	2	16	3	24
VII	6	42	4	28
VI	1	6	6	36
V	12	60	11	55
IV	7	28	5	20
III	6	18	4	12
II	9	18	9	18
I	4	4	3	3
Totals	47	192	45	196
Average Weighted Score		4.1		4.4