DOCUMENT RESUME

ED 062 671 CG 007 219

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TITLE Sociometric Effects in Small Classroom Groups Using Curricula Identified as Process-Oriented.
INSTITUTION Cornell Univ., Ithaca, N.Y.; State Univ. of New York, Cortland. Coll. at Cortland.
PUB DATE Apr 72
NOTE 23p.; Paper presented at the American Educational Research Association in Chicago Illincis on April 3-7, 1972

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Group Activities; Group Behavior; *Group Dynamics; Group Experience; Group Membership; *Group Relations; Groups; *Group Status; Group Structure; Group Unity; *Small Group Instruction; *Sociometric Techniques; Teaching Methods

ABSTRACT

This study was an attempt fo document aspects of small group work in classrooms engaged in the process education curricula called "Materials and Activities for Teachers and Children" (MATCH). Data on student-student interaction was related to small group work and gathered by paper-and-pencil sociometric questionnaires and measures of group cohesion. The MATCH curricula were used in 10 fifth and sixth grade social studies classes for an hour a day over a two to three week period in five different elementary schools. A 12-item group cohesion question questionnaire related to such elements of group cohesion, as satisfaction, solidarity and loyalty was administered both during and after MATCH Kit use. The findings suggest that status in classroom groups does affect attitudes and feelings toward group members and toward small group work. It was suggested that lower chosen students may be able to increase their social interaction skills with practice in appropriate learning settings provided by process-oriented curricula like MATCH. (Author/BW)

SOCIOMETRIC EFFECTS IN SMALL CLASSROOM GROUPS USING CURRICULA IDENTIFIED AS PROCESS-ORIENTED

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Paper presented at American Educational Research Association, Chicago, Illinois
April, 1972

INTRODUCTION

The Objective of the Research

This study was an attempt to document aspects of small group work in classrooms engaged in process education. Group cohesiveness and the changing patterns of group sociometry were explored as aspects of student-student interaction. Data were also collected on students' attitudes toward small group work under naturalistic classroom conditions.

The purpose of this investigation was to examine some questions about process education as it exists in the classroom environment. Since, as Cole (1970) reports, "one encounters many educators who talk and write about process education, but apparently have devoted little attention to explaining what it is or how it came about," this study was conducted as an exploratory inquiry into aspects of process education. It was not intended as a controlled study in search of definitive answers, because as an instructional technique, process education is in early stages of development. Instead, this study is generative, in hopes that it may provide some basic knowledge about process education which will, in turn, lead to more sophisticated inquiries into the nature of process education.

Although research and theory related to small groups has increased tremendously during the last few decades; of the total volume only a few studies have been directed toward studying children in the classroom organization (Johnson and Bany, 1970). Indeed relatively few studies of small groups are done in naturalistic settings (McGrawth and Altman, 1966). However, the concepts and variables of small group research have implications for the understanding of classroom behavior and it is within this framework that the results of this investigation are discussed.

The Specific Focus of the Research

The specific focus of the research was to answer this question: Does the introduction of process-oriented curricula produce any change in students' interpersonal relationships and social interactive skills?

Background

What is Process Education? A formal definition of process education is presented by Ripple (1971) as follows: "Process education is defined as formal intervention directed toward facilitating and developing skills in the pupil that are essential to his dealing effectively with information and experience for the purpose of meaning making and attaining goals". Less formally, process education seeks to emphasize aspects of process behaviors that include essential information gathering, processing skills, computational skills, self-initiated learning, and general problem solving and higher order thinking. Also, process education values equally (along with abstract conceptual skills) social interactive and introspective analysis skills (Herse, 1970). Process education is education that is directed toward achieving these goals.

How does Process Education differ from Traditional Education?

Process education differs from traditional education in several ways. First, the content of process education is the processes themselves, the skills of higher order thinking and problem solving, and of meaningful personal relations, that encourage the development of the whole person.

Second. Process education rests upon a value system that differs from traditional education. Cole (1970) describes these opposed value positions as follows: placed on the negative end of the continua, conventional education views knowledge as absolute and true; learning as unnatural and difficult; the learner as a passive recipient of knowledge and experience; and the school as an authoritative transmitter of established values and knowledge. In contrast, and on the positive end of the continua, process education views knowledge as tentative and arbitrary; the learner as an aggressive and active seeker of knowledge and experience; and the school as a setting for the emergence of values and knowledge through inquiry.

Third. The basic value positions underlying process education require a re-orientation of the teacher-learner roles. Teachers' roles based on conventional education tend to be authoritarian and didactic, viewing the teacher as a transmitter of knowledge and a keeper of discipline. However, teachers' roles based on values appropriate to process

education tend to view the teacher as a learner in his own right; an arranger of experiences conducive to observing, questioning and hypothesizing, a motivator of student thought; and as an encourager and diagnostician of students' difficulties (Deffenbaugh, Dalfen and Ripple, 1970).

Expectations for student behavior also alter as a function of emphasis on process education. From passive acceptor of teachers' mastery and wisdom, the student moves toward self-initiated learning, toward increased independence and responsibility, self-direction and increased participation. High pupil involvement and commitment to multiple tasks is an integral part of process education as is pupil responsibility for making his own meaning. The role of the pupil in process education is to acquire and apply competencies and attitudes facilitating and developing skills; skills that are essential to his dealing effectively with information and experience.

This importance of increased responsibility for, active participation and independence in, learning has been noted by such educators as Rogers (1969) and Bruner (1960). The importance of emphasis on the affective and social interactive skills in learning is cited by Piaget (Flavell, 1963) and Maslow (1962), among others.

Fourth. In order to facilitate the acquisition of process skills, process education requires different kinds of instructional materials which are appropriate to the re-orientation of teacher-learner roles. As a result of the increased interest in process, new curricula are being developed whose objectives are the promotion of the intellectual and affective skills and other generalizable behaviors mentioned previously. A search for process curricula by the personnel at the Eastern Regional Institute for Education (ERIE) has resulted in a list of instructional systems, materials and techniques published under the title, "Encounters in Thinking: A Compendium of Curricula for Process Education" (Sefarian and Cole, 1970). One such curriculum identified as process-oriented was "Materials and Activities for Teachers and Children" or MATCH kits. MATCH kits are the curricula upon which this investigation is based.

The MATCH Kits -- Description

The MATCH kits are self-contained, student-directed, multi-media kits designed to facilitate communication between elementary school teachers and

to foster student-student interaction. The basic premise behind these Kits, which are primarily two- to three-week social studies units, is that words are limited as mediators of learning and that objects and activities are needed in great variety to improve and expand the learning of many subjects (Kresse, 1968). Thus, non-verbal learning is facilitated through the use of real objects combined with films, recordings, pictures, models, clothing, books and maps. This emphasis on the use of concrete objects in learning is consistent with the theory of Piaget (Flavell, 1963) who hypothesizes a stage of intellectual development which is presymbolic and dependent upon direct experiences with objects. The kits emphasize the learning of process skills in the cognitive, affective and interpersonal domains. Three MATCH Kits were used in this investigation; the House of Ancient Greece, The City, and the Japanese Family. Each contained student-directed activities for small group work in the classroom. The learning experiences included such activities as these:

The House of Ancient Greece

Students, acting as Archeologists, identify and use artifacts (such as a morter and pestle, an oil lamp, toys, and coins) in an attempt to determine from which room in the "dig" these items were collected.

The City

Using wooden models, photos and records, students tackle city planning problems, map making, "Zoning" and the concept of "Cityness".

The Japanese Family

Through role playing, students learn of the customs, manners and values of a suburban Japanese Family. They learn appropriate "food", "shoe" and "religious manners" including how to behave at a Shinto-Buddhist Alter, which they themselves erect.

MATCH as a Facilitator of Small Groups

Process curricula like MATCH (which emphasize cooperative problem-solving in small groups), by their very structure, offer an ideal situation for

eliciting such small group characteristics as unity, solidarity, loyalty and satisfaction. These are components which are considered by some (Johnson and Bany, 1970) as elements in group cohesion.

Students using MATCH are exposed to student-student interaction, to the experiences and varied interpretations of peers, to different questions and points of view that reiterate the view that knowledge is arbitrary. Curricula like MATCH act as powerful mediators for small gro interaction in both the cognitive and affective domain. Further, the fact that small, face-to-face classroom groups must interact intimately and frequently while using MATCH kits provides real opportunity for the development of new patterns of social attraction, of acceptance or rejection, among students engaged in a process curricula.

This research was an attempt to document the kinds of social interaction behaviors that occur during process education.

METHODOLOGY

Subjects

This investigation was conducted on ten fifth- and sixth-grade social studies classes from five elementary schools in New York State. Each class was divided by the teacher into five or six small groups for work on the three-week social studies curricula called MATCH. Two groups from each classroom were randomly selected for observation by the investigator. Total number of groups observed was twenty.

Data was gathered by means of paper-and-pencil questionnaires, given as both pre- and post-test; a sociometric questionnaire based on the work of Moreno (1934) and a group cohesion questionnaire, developed by the investigator, since no standardized measure of group cohesion exists (Cartwright and Zander, 1968). The sociometric questionnaire asked the student to make three choices of classmates they wished to work with during the use of MATCH. The group cohesion questionaire asked

twelve "agree - disagree" choice questions based on such components of group cohesiveness as solidarity, loyalty and satisfaction, and tapped such group feelings as cooperation, affiliation, pride and group purpose and goals.

Procedure

As a pretest, students were given the sociometric questionnaire, in which they indicated their choice of three students with whom they wished to work on a social studies project. The teacher then formed the small classroom groups without considering the childrens' choices. After three weeks of intensive collaboration on the MATCH kits, children were again asked to choose three students with whom they wished to work on a social studies project. These answers composed the post-test administration of the sociometric questionnaire.

Students were administered the group cohesion questionnaire, after three days of intensive group experience with MATCH activities. They answered this pretest form of the questionnaire by circling agreement or disagreement with the twelve questions concerned with group cohesion. The post-test, administered after the completion of the MATCH kits, asked the same twelve questions in the same order; however, the format did vary. Spaces were provided for the students to indicate why they had responded as they had. These written responses were a useful source of data as they reflected the attitudes and feeling of the students toward the small group work.

Treatment of Data - The Sociometric Questionnaire

The sociometric questionnaires were used to obtain four different scores for each of the twenty classroom groups as follows:

1. The individual sociometric score
2. The total group sociometric score
3. The In-group total sociometric score
4. The In-group heterogeneous choice score

The Individual Sociometric Scores were first obtained for all members of each class. This score represents the extent to which an individual child was chosen by all his classmates and therefore the rank position he or she held in the classroom structure. Students were asked to pick three students with whom they wished to work on a social studies projects. The individual sociometric score was obtained quantitatively by summing the number of times he or she was chosen and weighing the score according to the following:

First choice - 3 points
Second choice - 2 points
Third choice - 1 point
Unchosen - 0 points

An example: Group 5 Teacher X

	Chosen by Classmates as:			Individual Sociometric total score
	1st	2nd	3rd choice	
Jane	3+3+3	2	1	12
Peg	3+3+3	2+2	1	14
George	0	0	1	1
Ralph	3	2+2	1	8
Sally	0	0	0	0

The total group sociometric score. The total group sociometric score represents the rank position among other classroom groups. This score was obtained by summing the individual sociometric scores of all the members of a given group, adjusted to the average group size of five.

An example:

	Individual Total Score
Jane	12
Peg	14
George	1
Ralph	8
Sally	0
	35

Total group sociometric score = 35

The In-Group Total Sociometric Score. This score indicates the extent to which members of a given group chose each other. The pretest individual sociometric scores were used as a basis to separate students within a given group into the following three categories: high chosen, middle chosen and low chosen. In all cases, the two students in a given group with the highest individual sociometric choice scores were assigned to the high chosen category, and the two lowest scoring students to the low chosen category. The one or two remaining students, depending on group size, were assigned to the middle category.

A three-by-three matrix was constructed to illustrate the extent to which students in a given category, high, middle, or low, choose students within the same group, in either the high, medium or low category. Choices in each category were summed for each cell, and the total sum was called the In-Group Total Sociometric Score. The pre- and post-test in-group total sociometric scores for each group were determined in this manner, and the difference between scores (i.e., the post-test score minus the pre-test score) was noted.

An example:

Jane = 12 (high chosen)
Peg = 14 (high chosen)
Ralph = 8 (middle chosen)
George= 1 (low chosen)
Sally = 0 (low chosen)

	High Chosen	Middle Chosen	Low Chosen
H	3+3=6	0	0
M	0	0	0
L	0	0	0

Jane, (high chosen) chooses Peg, (high chosen) as first choice (3 points)
Peg, (high chosen) chooses Jane, (high chosen) as first choice (3 points)
No one else in this group chose anyone else in this group.

In-Group Total Sociometric Score = 6

In-Group Heterogeneous Choice Score. This score represents the extent of the degree of heterogeneity of choices within the group. It was obtained by counting the total extent to which top scorers chose lowest scorers and lowest scorers chose top scorers. The pre- and post-test In-Group Heterogeneous choice scores for each group were determined in this manner, and the differences between scorers, (i.e., the post-test score minus the pre-test score), was noted. This difference between in-group heterogeneous choice scores, either a gain or a loss, indicated the shift in choice distribution which is an evidence of desegregation of the rank effects in the classroom group.

An example:

	High Chosen	Middle Chosen	Low Chosen
H	0	0	2
M	0	0	0
L	3	0	0

Jane, (high chosen) chooses George (low chosen) as a first choice (3 points)
Sally, (low chosen) chooses Jane (high chosen) as a second choice (2 points)
No other heterogeneous choices were made in this group.

In-Group Heterogeneous Choice Score = 5

In order to further investigate the data, additional analyses of the sociometric questionnaire were carried out. The two groups in each of the ten classrooms were divided into two categories on the basis of their total group sociometry scores. The group with the highest total of individual sociometric score was designated the higher chosen group, the remaining group, the lower chosen group. Thus ten groups, one from each classroom, formed the higher chosen groups, and the ten remaining groups formed the lower chosen groups. Differences between the higher chosen and lower chosen groups were examined to assess the differential effects (higher chosen versus lower chosen) of group membership on total, in-group and heterogeneous sociometry and group cohesion.

Group Cohesion Measure

The group cohesion measure was administered both as pretest and as post-test.

The twelve questions concerning group cohesion included questions on eight dimensions: group goals, cooperation, affiliation, defense of group, group affinity, group pride, group versus individual work and satisfaction with group.

A Group Cohesion Score was obtained by summing the total of individual answers in agreement with the statements, (i.e., "The purpose of this group is to help each other do good work"; Our group shares ideas and materials when we work, etc.) adjusted to an average group size of five.

RESULTS

Sociometric

When the total group sociometric scores were analyzed for all groups an increment in the means was found significant at the .05 level of confidence. In-group total sociometric and in-group heterogeneous choice scores also made significant gains. The results of t-tests performed on the means for the sociometric scores are reported in Table 1.

Table 1. T-tests of Significance between Means of Groups on Total Group Sociometric, In-Group and Heterogeneous Choices.

	Pretest	Post-test	t-test
Mean of Total Group Sociometric Choices	28.98	33.01	2.51*
Mean of In-Group Sociometric Choices	5.29	8.47	2.55*
Mean of Heterogeneous Sociometric Choices	1.35	4.80	3.92***

*p < .05 ** p < .01 ***p < .005

Group Cohesion

No significant difference was found in the total scores for the group cohesion measure from pre- to post-test. However, when answers to each of the 12 questions were analyzed separately, two questions showed decrements which were significant at the .05 level of confidence. These questions were "our group is the best group in the room," and "if I was asked to work in another group, I'd leave this one".

Differential Effects of Group Membership - Sociometric

The total (20) classroom groups were evenly divided in two categories, higher and lower chosen, on the basis of total group sociometric scores, which indicated the rank of the groups in the classroom structure. The difference between the means was highly significant on the pretest, at the .005 level of confidence. Although the post-test was still significant, it was less so ($p < .01$).

Since the difference between the higher chosen and lower chosen groups was established further analyses were completed on the data with the groups divided.

T-tests of significance performed on the means of higher and lower chosen group on both In-group total sociometric and on In-group heterogeneous sociometric choices were also significant, favoring the lower chosen groups.

Table 2. T-test of Significance between Higher Chosen and Lower Chosen Groups on In-group Sociometric Scores.

	Pretest	Post-test
Mean of Higher Chosen Groups	5.85	7.25
Mean of Lower Chosen Groups	4.94	9.70
T-test	.53	1.22*

Table 3. T-test of Significance between Higher Chosen and Lower Chosen Groups on Heterogeneous Choice Scores.

	Pretest	Post-test
Mean of Higher Chosen Groups	1.10	2.40
Mean of Lower Chosen Groups	2.20	7.10
T-test	.12	2.95*

Differential Effects of Group Membership - Cohesion

The results of the group cohesion measure favored the higher chosen groups at the .05 level of confidence on the pre-test. The level of significance reached on the post-test was .01, again favoring the higher chosen group. These results are reported in Table 4.

Table 4. T-test of Significance between Higher Chosen and Lower Chosen Groups on the Group Cohesion Measure.

	Pretest	Post-test
Mean of Higher Chosen Groups	45.23	42.68
Mean of Lower Chosen Groups	34.89	32.10
T-test	2.46*	2.85**

*p < .05 **p < .01

When the 12 questions of the group cohesion measure were scored separately for the higher chosen and lower chosen groups, significant differences between the two groups were found. The higher chosen groups were consistently and markedly higher in agreement with almost all questions on the group cohesion measure on both the pre- and post-test.

T-tests of the significance of the difference between means of higher chosen and lower chosen groups were performed for all 12 questions on the cohesion questionnaire. Several of these differences were significant on both the pre- and post-test adding further support to the evidence that differences exist between higher and lower chosen groups on the group cohesion measure. These results are reported in Table 5 which follows.

Table 5. T-test of Significance between Means of Higher and Lower Chosen Students on the Group Cohesion Measure.

Question	Pretest	Post-test
1. The purpose of this group is to do good work.		
Mean of higher chosen	4.68	4.90
Mean of lower chosen	4.20	4.35
t-test	1.58	1.41
2. All the kids in this group are interested in doing good work.		
Mean of higher chosen	4.35	4.23
Mean of lower chosen	2.76	2.47
t-test	2.65*	6.07****
3. Our group usually agrees with each other when we do our work.		
Mean of higher chosen	3.42	2.88
Mean of lower chosen	3.20	2.50
t-test	.29	.55
4. Our group shares ideas and materials when we work.		
Mean of higher chosen	4.04	4.22
Mean of lower chosen	4.03	4.37
t-test	.06	.14
5. All the members of our group like each other.		
Mean of higher chosen	2.53	3.26
Mean of lower chosen	1.68	1.98
t-test	.79	2.34*
6. Our group is the best group in the room.		
Mean of higher chosen	2.52	1.52
Mean of lower chosen	1.20	1.13
t-test	2.18*	.51
7. If someone said something bad about our group, I'd be mad.		
Mean of higher chosen	2.98	2.62
Mean of lower chosen	2.17	2.41
t-test	1.39	.32

Table 5. Continued

Question	Pretest	Post-test
8. If I was asked to work in another group I'd leave this one.		
Mean of higher chosen	3.44	3.20
Mean of lower chosen	3.41	2.57
t-test	.04	.73
9. I like our group best, and I'm proud of the work we do.		
Mean of higher chosen	4.43	3.91
Mean of lower chosen	2.90	2.87
t-test	3.19**	2.36**
10. I think I do better work in this group.		
Mean of higher chosen	3.74	3.91
Mean of lower chosen	2.69	2.62
t-test	2.05*	2.34*
11. It's fun to work with this group.		
Mean of higher chosen	4.67	4.13
Mean of lower chosen	3.40	3.41
t-test	2.95**	1.76
12. I want to work with this group again.		
Mean of higher chosen	3.95	4.02
Mean of lower chosen	3.11	2.59
t-test	2.00*	2.60*

*p <.05 ** p < .01 ***p < .005 ****p < .0005

DISCUSSION

The research reported in this investigation was conducted under naturalistic conditions, free from experimental manipulation. Certain limitations were inherent in the study, and should be mentioned prior to a discussion of the findings.

Since no control groups were included, caution must be used in interpreting the results. Influences of a causal nature attributing changes in behavior to the MATCH kits should be avoided since it was not the objective of the investigator to determine the effects of MATCH kits use per se. Rather the investigator sought to document aspects of small group work in classrooms engaged in process education, and MATCH kits provided an environment consistent with the value positions of process education.

A second qualification concerns the duration of the investigation. Data were collected over a period of five weeks, and the MATCH kits were themselves used only for a three-week period. This time period is too brief to assess longitudinal effects of process education. Further investigation of a controlled, longitudinal nature are required to provide definitive answers.

However, keeping these considerations in mind, it is important to note that significant increments were found in several areas of this study. The probability that MATCH kits have a causal responsibility for these increments is suggested.

Sociometric Results

The need to belong and be accepted has been noted most effectively by Maslow (1954), who lists fulfillment of this need as basic to becoming a self-actualized person. These needs however cannot be satisfied directly and are dependent upon the positive reactions of others. Several investigations have emphasized the importance of social acceptability in the classroom (Moreno, 1934: Gronlund, 1951, Northway; 1952).

The finding that total group sociometric scores increased significantly supports the findings of other investigators reported by Johnson and Bany (1970) who note that the creation of small flexible groups can raise the social acceptability scores of children who at the beginning of the experience were not socially integrated into the group. Conclusions from these studies were that in general, the social status of children tends to rise following group experience as long as groups experience success. Since MATCH provides for no formal evaluation, and competitive press was negligible, the data would tend to suggest that the groups did experience success.

The results of analysis on both in-group and heterogeneous choice scores were also significant. These scores reveal that group members chose each other more often as work partners, and that group members made more heterogeneous choices of work partners after the group experience. The increase in in-group heterogeneous chance scores indicates a desegregation of the rank effects in the classroom groups. Explanations for shifts in member choices must be speculative, as no data were gathered to determine why students selected as they did. However, the results of other investigations may explain these findings. Several of these may be relevant to this research. Specifically, the opportunity for increased interaction and increased oral communication both are known to increase liking behaviors (Johnson and Bany, 1970). Frequency of interaction is also postulated to increase liking, (Cartwright and Zander, 1968). And as previously mentioned, social status tends to increase with the success of the group. The MATCH experience would seem to provide opportunities for increased interaction and for success.

Cohesion

Previous research (Back, 1951 and Kelly, 1951) reports that deliberate attempts to create cohesion are successful. But this investigation made no attempt to foster cohesiveness. Instead, the naturalistic setting of small group work provided an opportunity for cohesion to develop. That there was no significant increase in total group cohesion may be due to several factors.

Specifically, research in this area indicates several variables which effect group cohesiveness; establishing a prestige hierarchy among members, employing competitive practices, too little opportunity to interact and communicate, or the absence

In reviewing these factors with regard to the particular framework of this experience with process oriented education, several of them seem unlikely as possible explanations of the findings.

No prestige hierarchy was imposed; the opportunity for competitive practices was negligible, and there was plenty of opportunity for interaction and communication as a result of the structure of the experience.

However, there may have been leadership problems. The structure of the MATCH kits varies in this regard, from a quite structured leadership role (in the House of Ancient Greece) to a no structured leadership role (The City) within the groups. The effects of the differential structuring of the leadership roles within the groups then, may have had a substantial effect on group interaction which may have affected group cohesion. Unfortunately, no direct study of group leaders was possible in this investigation, but the question raised is a provocative one and points the direction for further research.

Differential Effects of Memberships in Higher and Lower Chosen Groups

The data strongly suggests that status in classroom groups does effect attitudes and feelings toward small group work.

The very dramatic difference of the higher chosen and lower chosen groups in the total sociometric scores is indicated by the significance of the difference between the means on both the pre- and post-test for total group sociometric choices. Higher chosen groups contained group members who were rated higher in classroom status. Evidentally these higher chosen students are pegged as possessing qualities which make them attractive and desirable to other classmates and, furthermore, it also seems evident that belonging to a group of higher chosen students holds certain advantages for group members. Although other investigators (Kuhlen and Collister, 1952; Roff and Sells, 1965) have found sociometric and educational status related, no such discrepency existed between the higher and lower chosen groups on ability measures of IQ and reading score in this study. This fact tends to dismiss this variable as a causal factor in the differences between groups.

Significant differences were found between higher and lower chosen groups on total group cohesion scores favoring the higher chosen students, and this difference increased over time. Some insight into this discrepency is gained when the 12 questions of the cohesion measure are scored separately for each group. The higher chosen groups have a consistently higher percentage of agreement with the questions on both pre- and post-test. The results of the tests attest to the many significant differences between the higher and the lower chosen groups. The higher chosen students tend to view the group work situation in a much more favorable light.

Particularly, they perceive their group members as being interested in doing good work, as members of the group liking each other, as being proud of the work they do, of thinking they do better work in the group, and finally, of wanting to work with the same group again.

The difficulties in ascribing any kind of causality to more cohesive groups (which are also the higher chosen groups in a sociometric sense) is noted by Cartwright and Zander (1968). A better approach to the explanation of the difference between higher chosen and lower chosen groups might be a developmental one.

Namely, in terms of social development, the higher chosen students possess more skills, more abilities, more positive feelings toward group encounters than do the lower chosen students. The higher chosen student groups were more socially accepted at the start of the investigation; developmentally they were possibly more mature and secure in the group interaction, more able and willing to participate, and more able to subjugate their own interests to that of the group. Since no data were gathered to support these conclusions, they must be considered speculations.

On the other hand, under proper conditions, lower chosen students seem to be able to make gains in social skills and abilities in small group work learning situations which enable students to practice communication skills, to interact, which are more cooperative than competitive, and which provide sufficient freedom to make decisions in a supportive non-threatening atmosphere. Learning situations like this may give these students practice in social skills which then enhances their status in the group. MATCH would seem to provide such a learning situation.

The lower chosen students in this investigation initially had no significant differences in in-group sociometric choice scores or in heterogeneous in-group choice scores, yet the post-test revealed increments in both these areas that were significant.

This finding supports the notion that the lower chosen students, after a small group work experience of intensive interaction, picked in-group members and were picked by higher status group members more frequently.

It seems possible, then, for lower chosen student groups, the "outsiders," to increase their social interaction skills with practice in appropriate learning settings such as process-oriented curricula like MATCH provides. It seems likely that increased liking in small groups would precede the development of group cohesion. Unfortunately this investigation of limited duration, could only begin to gather evidence that might carry this speculation to a definitive conclusion.

SUMMARY

This study was an attempt to document aspects of small group work in classrooms engaged in the process education curricula called MATCH. Data on student-student interaction related to small group work was gathered by paper-and-pencil sociometric questionnaires and measures of group cohesion.

The MATCH curricula (The City; Japanese Family and House of Ancient Greece) were used in ten fifth- and sixth-grade social studies classes for an hour a day over a two- to three-week period in five different elementary schools.

All students in the ten participating classrooms worked with the MATCH Kits in small groups during the period reported by this study. However, only two randomly selected groups in each classroom were chosen for observation (a total of 20 groups) with five or six children in the group.

Children indicated their choice of work partners for the social studies groups in a sociometric questionnaire given as a pretest. However, children were assigned to work groups randomly by the teacher and not according to students' choice. A group cohesion questionnaire consisting of 12 questions related to such elements of group cohesion, as satisfaction, solidarity and loyalty was administered several days after the intensive small group work activities in the MATCH Kits began. This measure was administered again as a post-test after MATCH Kit use.

There were significant effects in the area of interpersonal relationships and social interaction. Both total group sociometric and in-group and heterogeneous choice scores increased significantly, which represented a shift in the pattern of social status and interaction towards desegration of the rank effects in the classroom. There was no significant increment in total group cohesion.

Differential effects of membership in higher and lower chosen groups were noted. No significant differences in ability were found between groups. However, higher chosen groups differed significantly from lower chosen groups in group cohesion. Lower chosen groups significantly increased in both in-group and heterogeneous choice scores, (which are measures of sociometric status) indicating that lower chosen students were picked more by group members after the intensive small group, process-oriented learning experience.

This finding suggests that status in classroom groups does affect attitudes and feelings toward group members and towards small group work. It seems possible, then, for lower chosen students, "the outsiders," to increase their social interaction skills with practice in appropriate learning settings provided by process-oriented currucula like MATCH.

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