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AN EXAMINATION OF THE EFFECTIVENESS OF POIRIER'S TEAM LEARNING IN REDUCING THE NUMBER OF SOCIALLY ISOLATED ELEMENTARY SCHOOL CHILDREN AND THE INTENSITY OF SOCIAL ISOLATION OF FRINGE ISOLATE CHILDREN IN THE ELEMENTARY SCHOOL CLASSROOM

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AN EXAMINATION OF THE EFFECTIVENESS OF POIRIER'S TEAM LEARNING IN

REDUCING THE NUMBER OF SOCIALLY ISOLATED ELEMENTARY SCHOOL

CHILDREN AND THE INTENSITY OF SOCIAL ISOLATION OF FRINGE

ISOLATE CHILDREN IN THE ELEMENTARY SCHOOL CLASSROOM

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A Dissertation

Presented to

The Faculty of the School of Education

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———————————

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

———————————

by

Richard Joseph Scardamaglia

May 1974

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Abstract of the Dissertation

PROBLEM: Because of the detrimental effects of social isolation on children's achievement, peer relations and self-image, there is a need for an effective classroom organizational program which will reduce the number of isolates and fringe isolates among elementary school children.

PURPOSE: Since Poirier's team learning exposes the isolate to a high incidence of social interaction, it was the objective of this study to investigate the effectiveness of Poirier's team learning in improving the sociometric standing of children identified as social isolates and fringe social isolates in the elementary school.

PROCEDURES: Twenty-two randomly selected classes were selected from six San Francisco Bay Area school districts. The teachers of the eleven experimental classes were given inservice training in the principles of Poirier's team learning. For approximately five months, the children in the experimental classes were organized into learning teams of five to six students. Each team worked together on assignments. The children in each team were instructed to help one another whenever possible. Each group received team points for their collective efforts. Rewards were often given. Cooperative competition between teams was encouraged. All children were given Georgia Sachs Adams' sociometric surveys to determine their sociometric standing. The chi-square was used to test the effect of Poirier's team learning on the rejection of social isolates and highly rejected fringe social isolates. The analysis of variance was used to test the effect of Poirier's team learning on the intensity of rejection of the fringe social isolate by his peers.

FINDINGS: No significant difference was found to exist between the number of isolates in the experimental group and those in the control group. No significant difference was found to exist between the number of isolates and highly rejected isolates combined in the experimental group and those in the control group. A significant difference was found to exist between the mean of the scores of the fringe isolates of the experimental group and that of the control group. However, this difference was the direct antithesis of that anticipated by the researcher and indicated that classes in the study using Poirier's team learning had significantly more isolates in them than did classes not using Poirier's team learning.

CONCLUSIONS: The findings reject the hypothesis the Poirier classes would have significantly fewer social isolates in them.

On the contrary, although not statistically significant, the team learning classes had more isolates in them than did the control classes. The findings also rejected the hypothesis that Poirier classes would have significantly fewer isolates and highly rejected social fringe isolates combined in them than classes not using Poirier's team learning. Again, although not significant, the classes using Poirier's team learning had more isolates and highly rejected fringe isolates in them than did the control group classes. The findings rejected the hypothesis that Poirier classes would have fringe isolates with significantly higher social acceptance scores than those children in classes not using Poirier's team learning. In fact, the converse was true. Fringe isolates in Poirier classes had significantly lower social acceptance scores than those in the control classes. This was the direct antithesis of the assumptions of this study.

RECOMMENDATIONS FOR FURTHER RESEARCH: Four further investigations are recommended: (1) Experiment to ascertain the effect of competition on social isolates. (2) Experiment to ascertain what changes, if any, occur in social acceptance within a learning team from the time it is organized to its deactivation. (3) Experiment to ascertain what effect placing less socially accepted children with those who have nominated them on a sociometric survey will have on social status. (4) Experiment to ascertain what effect to social status model-reinforcement group counseling would have.

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THE PROBLEM AND OBJECTIVES OF THE STUDY

INTRODUCTION

Guinouard and Rychlak (1965) view human behavior as both "cause and effect" in the social milieu within which the individual develops. The dual role, particularly true of personality patterns, plays a vital part in the relationship between the individual and his peers. Behavioral scientists recognize that peer rejection can be detrimental to the personal and social adjustment of an individual and in children often contributes to a retardation of their learning. Additionally, poor performance in school work can contribute to the rejection of a child by his peers (Stevens, 1962). Busswell (1953) found that the isolate children he studied generally achieved below grade level while Guinouard and Rychlak (1965) found that the isolate children they studied had less self-confidence than their socially accepted peers.

The peer rejection which contributes to the retarded academic performance of many isolates becomes an obstacle which the classroom teacher must attempt to overcome if he is to successfully deal with the learning problems of the isolate.

Yet the study by Merl E. Bonney (1971) of North Texas State University indicates that none of the "conventional" approaches to solving the problems of the isolate child in our elementary schools has worked. In this study, the most commonly suggested "solutions" to the

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problem of the isolate child were tested and none were found to have made a significant difference in reducing the degree of isolation of the children studied. A complete list of these "solutions" appears in Chapter 2. It should be noted, however, that Bonney did not investigate long-term team learning, the focus of the present study, as an approach to reducing isolation in the classroom.

Amidon, Hoffman, and Foriano (1963, 1964) allude to carefully selected learning groups as a possible solution to the problem of severe child isolation. They suggest that if the isolate child were placed in a learning group where his abilities and talents were actually needed and where the group as a whole could not succeed without them, the degree of isolation of the isolate child would be reduced.

One of the most meticulously thought-out plans for team learning at the elementary school level is that of Gerard Poirier's (Poirier, 1970). Poirier has had noteworthy success in establishing team learning in the San Francisco Bay Area as an alternate form of organization for the elementary school classroom. Although not specifically designed to aid in the reduction of isolates in the classroom, Poirier's learning teams which he terms, "micro-societies", are carefully balanced with regard to talents and abilities. Since the learning teams are in co-operative competition with the other learning teams in the class, the members of each team are placed in the position of needing the co-operation and talents of each of the other team members. Thus, out of necessity, the members of each group must interact and cooperate.

THE PROBLEM

The introduction briefly cited the detrimental effects of social isolation on the elementary school child. Social isolation was viewed as being injurious to the social and personal adjustment of the individual, retarding his learning and causing him to be less self-confident than his peers. Team learning was alluded to as a possible solution to the reduction of social isolation in the classroom.

This study proposes to investigate the effect of team learning on social isolation in the elementary school.

Statement of the Problem

The present study is designed to test the effectiveness of Poirier's team learning in reducing the number of isolates and fringe isolates in selected elementary school settings and the intensity of isolation of those children identified as isolate and fringe isolate.

Importance of the Study

Because of the detrimental effects of isolation on children's achievement, on their peer relations and self-image, there is a need for an effective classroom organizational program which will reduce the number of isolates and fringe isolates among elementary school children. The effectiveness of Poirier's team learning in reducing the number of isolates and the intensity of isolation of those children identified as isolates is yet to be discovered. However, its adaptability to most of the daily subjects and organization of the elementary school day will expose the isolate to a high incidence of social interaction. Since in team learning, the isolate is a needed member of the group and since

Amidon, Hoffman, and Forlano (1963, 1964) believe that being so needed is an essential element in reducing isolation in the classroom, Poirier's team learning does show promise of reducing child isolation. This relationship of team learning to child isolation should be examined and reported upon.

PURPOSES OF THE STUDY

The first objective of this study is to investigate the effectiveness of Poirier's team learning in improving the sociometric standing of children identified as isolates and fringe isolates in the elementary school.

The second objective of this study is to investigate the effectiveness of Poirier's team learning in reducing the number of isolates and fringe isolates in the elementary school.

HYPOTHESES

Hypotheses which this study determined to support or reject include:

Hypothesis 1. Classes organized upon the principles and procedures of Poirier's team learning will have significantly fewer social isolates in them as a result of team learning as measured by sociometrics than classes not using Poirier's team learning.

Hypothesis 2. Classes organized upon the principles and procedures of Poirier's team learning will have significantly fewer social isolates and highly rejected fringe isolates in them as a result of team learning as measured by sociometrics than classes not using Poirier's team learning.

Hypothesis 3. Fringe social isolates in classes organized upon the principles and procedures of Poirier's team learning will be significantly less intensely rejected as a result of team learning as measured by sociometrics than fringe social isolates in classes not using Poirier's team learning.

ASSUMPTIONS AND LIMITATIONS

The study is based upon several assumptions and limitations. These are as follows:

Assumptions

1. The Georgia Sachs Adams' sociogram is an adequate measuring tool to identify social isolate and fringe isolate children at the elementary school level.

2. After having been selected at random, teachers subjected to inservice training will be able to implement the principles and procedures of Poirier's team learning.

3. Social isolation is detrimental to the social and personal adjustment of an individual.

4. While causes for social isolation might originate in settings other than the school, the school is in the best position to reduce the degree of social isolation of the isolate and fringe isolate child.

Limitations

1. Limitations exist in the selectivity of the grades chosen for the study, namely, grades three, four and five.

2. Not taken into account in this study, is the possible correlation of children's academic achievement with sociometric standing.

3. The variability of the teachers' ability to conceptualize and subsequently to implement in the classroom the principles and procedures of Poirier's team learning, constitutes a limitation.

4. The degree of willingness of the students to participate in the team learning process, constitutes a limitation.

DEFINITIONS OF TERMS

Terms applicable to this study were defined as follows:

1. Balanced groups. Poirier's formula for creating balanced team learning teams includes, in so far as possible, equal numbers of average, above average and below average students in the following areas: academic capability, creative capability and social capability, less important, but also taken into consideration, are: frequency of absence, daydreaming, weakness of oral work, immaturity, boisterousness, speaking out of turn, sporadic completion of homework, poor attitude, shyness, isolation, tendency to make frequent excuses, reliability, honesty and leadership potential (Poirier, 1970).

2. Classroom atmosphere. The term "classroom atmosphere" implies anything that helps the students to learn, and it replaces terms like control, authoritarianism, and discipline. According to Poirier, classroom atmosphere does not condone uncontrolled or permissive behavior. It takes in (Poirier, 1970):

   (a) citizenship,
   (b) honor code,
   (c) respect for others,
   (d) willingness to cooperate and participate,
   (e) social responsibility for the society of today and tomorrow.

3. Cooperative competition. Poirier's term to describe the presence of a high degree of cooperation among members of the same learning team while they are engaged in competition with other teams. It includes good sportsmanship toward members of the other teams while at the same time possessing a high degree of esprit de corps within the team (Poirier, 1970).

4. Fringe isolate child. Those children falling at or below the twenty-fourth percentile on the Georgia Sachs Adams' sociometric survey.

5. Highly rejected fringe isolate. For the purpose of this study, a child who receives only one nomination on the Georgia Sachs Adams' sociogram.

6. Intensity of rejection. The degree to which a child is isolated from his peers as measured by the total number of times he is chosen on the Georgia Sachs Adams' sociometric survey (the fewer the choices, the greater the intensity of isolation).

7. Isolate child. Those children receiving no nominations from their classmates on the Georgia Sachs Adams' sociometric survey.

8. Learning team. A group of students (usually
   from four to six) who work as a team toward a
   common learning goal. Each team is balanced in
   the aggregate student qualities to represent
   the strengths and weaknesses of the entire class.
   Team learning involves a cooperative-competitive
   approach to learning, and provides both an avenue
   for individualized teaching by redetermining the role
   of the teacher and a method for individualizing
   learning by more active participation of the
   students (Poirier, 1970).

9. Open plan school. A school with fewer walls
   separating classrooms. Students frequently move
   from one area in the school to another to attend
   class and to use facilities. Students are in-
   structed by more than one teacher and often times,
   by several. An open plan school may organize its
   teachers into teams or it may have them teach a
   subject speciality.

10. Rewards. Poirier feels that most team versus team
    competition requires a reward at its conclusion.
    He feels that the type of reward given is a
    personal matter to be handled by the teacher and
    the class. He suggests, however, that the decision
    on the matter be reached through a consensus among
    the teacher and the members of the micro-societies.
    Typical rewards suggested by Poirier are:

    (a) being awarded a "job" in the classroom
        such as window monitor;
    (b) having the right to be first in some
        future activity enjoyed by the children;
    (c) being allowed to perform for the rest
        of the class in a drama production;
    (d) being allowed to do something special
        for the rest of the class such as
        baking cookies for the class;
    (e) being awarded a special certificate
        of merit;
    (f) having the team's work displayed on
        the bulletin board;
    (g) being declared the winner of the
        competition;
    (h) having the right to five extra minutes
        of recess on the day of their choice;
    (i) having the privilege of having lunch
        with the teacher.

11. Self-contained classroom. A graded classroom in which
    all or nearly all the subjects are taught by one teacher.
    Some minor exchange of students between two or more

self-contained-classroom teachers may occur to capitalize on the subject strengths of teachers. However, the majority of the instruction occurs within the homeroom under the direction of the homeroom teacher.

12. Sociogram. The tally form used to record the responses of children to the sociometric survey.

13. Sociometric survey. The sociometric instrument used to evaluate relationships within a group. For the purpose of this study, the Georgia Sachs Adams' sociogram will be used (Adams, 1964).

14. Team leader. The student selected by the teacher to be the leader of his or her team. Students are generally allowed to be team leaders for six to ten weeks before a new leader is appointed by the teacher. During the course of the school year, most of the students in the team will have an opportunity to be team leader. The selection of the first team leader is considered crucial, however, and great pains are taken to insure the proper selection according to Poirier's recommendations. Poirier lists the following qualities the teacher should look for in his selection of the first team leader (Poirier, 1970):

    (a) excellent or better-than-average grades;
    (b) ability to command respect of peers;
    (c) ability to communicate knowledge, i.e., to "teach" others;
    (d) ability to motivate others, i.e., to kindle the desire to learn;
    (e) ability to maintain a classroom atmosphere in the family (team) unit;
    (f) ability to work well with others - to interact;
    (g) a "blending" personality - (shy students may also make good leaders).

Poirier lists the responsibilities of a team leader as follows (Poirier, 1970):

    (a) maintain the classroom atmosphere within his team;
    (b) assume responsibility for each member of his team;
    (c) develop concern for each member;
    (d) further the growth of empathy among team members;
    (e) permit each team member to express himself;

(f) work with the teacher as an ally;
(g) move toward self-enrichment;
(h) implement the honor code in his team.

15. <u>Team teaching</u>. A teaching organization under which two or more teachers are responsible for the instruction of the same students. Teaching responsibilities for the same subject may be jointly shared or each teacher may specialize in certain subject areas.

SUMMARY

This first chapter outlined the problem of social isolation in the elementary school. It noted the cause-effect relationship among social isolation and retarded achievement and poor self-concept. It also noted that social isolation has a detrimental effect upon the social and personal adjustment of the individual.

Efforts made by educators and researchers to reduce the degree of social isolation of rejected children were reviewed. Special note was taken of the efforts made by Amidon, Hoffman, and Forlano (1963; 1964) to treat social isolation using student teaming models. Poirier's team learning was described as one of the most meticulously thought-out plans for student team learning. It was further noted that Poirier's team learning had not been tested by researchers as to its effects of social isolation.

The chapter sets forth a statement of the problem, importance of the problem, hypotheses to be tested, assumptions and limitations upon which the study was based and defined the important terms related to the study.

Four additional chapters complete the remainder of the study. A review of current literature is included in chapter 2. Chapter 3

deals with the source of the data used as well as the research design and statistical procedures. Chapter 4 presents an analysis and interpretation of the obtained data. The fifth chapter contains a general summary, conclusions, and recommendations for further study.

Chapter 2

REVIEW OF THE LITERATURE RELATED TO THE STUDY

Selected literature pertaining to the study is presented below in four specific areas: (1) characteristics of the isolate child, (2) the behavior of the social isolate, (3) attempts to reduce social isolation, and (4) the effect of team learning on social isolation.

CHARACTERISTICS OF THE ISOLATE CHILD

The literature relating to the characteristics of the isolate child is discussed below under six headings. These sections deal with the following: (1) intelligence and the isolate child, (2) emotional stability and the isolate child, (3) physical appearance and the isolate child, (4) anti-social behavior and the isolate child, (5) school and recreational interest and the isolate child, and (6) sex roles and the isolate child.

Intelligence and the Isolate Child

Sociometric status has been found to be positively correlated with intelligence. In a 1967 study, Richards found a positive correlation between intelligence and sociometric status of from .21 to .63. He concluded:

> The relationship of ability, achievement and personality stability to sociometric status are complex, but the study suggests that the most highly accepted pupils are generally those with the most stable personalities and those most likely to be succeeding in their school work.

Merl E. Bonney in a study conducted in 1944 found a correlation coefficient of .34 for the third grade students he studied, a correlation coefficient of .31 for the fourth graders and a correlation coefficient of .45 for the fifth graders. Bonney concluded:

> Although these correlations leave no doubt about there being a positive relationship between popularity and degree of brightness in the groups studied, they nevertheless certainly are not high enough to permit accurate predictions from one measurement to the other. Obviously, there must be many exceptions to the generally positive trend shown by the coefficients.
>
> . . . .
>
> The reason why a few children can achieve a high degree of social success in spite of serious handicaps in intelligence and home background are undoubtedly to be found in the structure of their personalities. These children have attained the right proportions of aggressiveness, daring, sympathetic responses, and friendliness-traits which have been found in this follow-up study to be very important in winning admiration and in establishing interpersonal relationships.

Similar findings were reported by Grossman and Wrighter (1948), Laughlin (1954), and Jordan (1960). Busswell also compared accepted and non-accepted children on the factors of intelligence, achievement, and socio-economic status and concluded that " . . . in general those who are succeeding in their school work will also be succeeding in their school relationships with their peers."

Emotional Stability and the Isolate Child

Emotional stability has also been found to be positively correlated to sociometric choice. Hawkes and Koff (1968) found that groups identified through the use of an emotional adjustment battery as "adjusted" were found to have a significantly higher positive sociometric status and significantly lower negative sociometric status than those groups found to be "malajusted". Hawkes and Koff feel their

study indicates that there is a significant relationship between sociometric status and interpersonal maladjustment.

Gronlund (1959) and Schmuck (1964) in separate review of the literature similarly concluded that there is a positive correlation between assessed mental health and sociometric status. In like manner, Vacc (1968) found that the number of sociometric rejectees was significantly greater among those students found to be emotionally disturbed. Bruce Thomas Saunders reporting in the July 1970 issue of Psychology In The Schools commented on Vacc's findings by stating:

> Vacc's study is consistent with previous findings, namely, that mental health and emotional stability are significantly and positively related to peer status within the classroom; children who are emotionally disturbed are also socially rejected.

Trent (1957) studying the relationship between social status and anxiety within a population of institutionalized delinquent boys reported that the more anxious boys tended to be rejected by their peers, while less anxious boys tended to be accepted by their peers. Similar findings demonstrating the relationship between emotional stability and sociometric status are numerous. Bower, Teshvonian, and Larson (1958); Fitzsimmons (1958); and Gronlund (1959) have all found sociometric test choices to be related to ratings of mental health. Sociometric choice has also been related to the California Test of Personality (Bedoian, 1953), to the High School Personality Questionnaire of Cattell (Guinouard and Ryschlak, 1962), to the Thematic Apperception Test (Mussen and Porter, 1959) and to the Rorschach (Tindall, 1955).

Physical Appearance and the Isolate Child

Appearance may also play a part in the degree of rejection of the isolate child. Although not demonstrating a causal effect, Gronlund and Anderson (1957) found that rejectees were considered less good looking, less tidy and less likeable by their classmates. However, this was not found true for those students neglected but not rejected by their peers. The authors' findings suggest that pupils with low social acceptability cannot be placed in a single category. The socially neglected pupils appear to be ignored or overlooked by their classmates while the socially rejected pupils are actively disliked.

Anti-Social Behavior and the Isolate Child

There is some evidence to indicate that isolate children tend to be more anti-social than their peers. Northway (1944) suggested that some isolates invite rejection by directing their energies in such a manner as to interfere with or to frustrate the activities of the group. McClelland and Ratliff (1947) also confirm the anti-social nature of the isolate. In their study students identified as isolates were given the California Personality Test. It was found that those students who were not chosen on the acceptance test were among the lowest scoring on the personality scale. One of the traits on which the isolates most frequently scored high was Anti-Social Tendencies.

Kuhnen and Lee (1943) found that sociometric rejectees are less cheerful, friendly and enthusiastic while Northway and Widgor (1947) found that they participated less in class activities, strived less for group approval and were less sensitive to the feelings of others.

School and Recreational Interest and the Isolate Child

Low sociometric status children as a group differ from their peers in their interests. In a study by Barclay (1966), high socio-metric status boys were found to be less interested in book reports, television cartoons, and cowboy music and more interested in hobbies, dance and popular music than their low sociometric status peers. They were also less interested in history, astronomy but overwhelmingly more interested in sports. Barclay's findings relative to the high interest in sports of the sociometrically high scoring boy is indirectly sup-ported by Henderson (1958) who found high status boys to be signif-icantly more athletic than low status boys.

High sociometric status girls were less interested in class movies and class trips, western television programs, cowboy and reli-gious music than their low sociometric scoring peers. They were more interested in dance and popular music. Barclay concluded that interest patterns were distributed on a broad extroversion-introversion continuum. Activities that call for outgoing explorations in the environment are favored by those who possess the personal confidence to engage in them and have a reasonable expectation of success.

Barclay's observations of extroversion are further confirmed by a study by Ahlbrand and Hudgins (1970). In their study on verbal participation and peer status, they found that high participators, re-gardless of grade level or sex, similarly receive more nominations as top scholars, leaders and popular students by their peers than low participators. However, verbal participation alone may not be an in-dication of high sociometric status. Gronlund and Anderson (1957) found

that both highly accepted and highly rejected girls received signif-
icantly more nominations by their peers as "talkative". They concluded
that although talkative girls gain recognition, they do not necessarily
gain social acceptance. They felt that it was probably the nature of
their conversation, as well as other personality characteristics, rather
than the talking itself, that determines whether they will be accepted
or rejected by their peers.

Sex Roles and the Isolate Child

There is evidence to indicate that isolate children reverse the
traditional sex roles relative to the need for approval. Tulkin, Muller
and Conn (1969) found that the least popular boys in their study had a
higher need for approval than the popular boys. They discovered that
the boys they studied admired the need for approval in girls but con-
sidered it contrary to the male model. Boys with a high need for ap-
proval tended to be rejected by their peers. Conversely, girls who
showed less need for approval were not as popular as girls who had a
high need for approval. Apparently, a high need for approval was
perceived as a feminine characteristic desirable in girls but unaccept-
able in boys.

Summary

In this preceding section, a number of studies were cited demon-
strating a statistically significant relationship between intelligence
and sociometric status. Similar relationships were found between emotional
stability and sociometric status, anxiety and sociometric status,
positive self-concept and sociometric status, physical attractiveness
and sociometric status, anti-social behavior and sociometric status,

introversion and sociometric status and reverse sex roles and socio-metric status. All of the studies were correlational in nature and of course, do not necessarily indicate a causal relationship. It is clear however, that isolate children differ from their classmates in many ways.

THE BEHAVIOR OF THE SOCIAL ISOLATE

The literature relating to the behavior of the social isolate is discussed below under three headings. These sections deal with the following: (1) general academic performance and the isolate child, (2) self-esteem and the isolate child and (3) the isolate child's attitude toward school.

General Academic Performance and the Isolate Child

Socially isolated children tend to behave in a way that puts them at a disadvantage in the achievement centered school. John R. Muma (1965) found as an example, that low sociometric status children as a group are significantly poorer in their school work than their classroom peers. His study, using 3,917 junior and senior high school students, found a statistically significant relationship between academic performance and extremes in peer choice. Muma also found that students who were neglected by their peers, (not accepted or rejected) were not unsuccessful academically. This relationship between academic performance and sociometric status was also investigated and found to exist by Borg (1965). He found that social status and academic ability were highly correlated in heterogeneously grouped classes. He did note, however, that this relationship did not exist in the homogeneously organized classrooms he studied.

Busswell (1953) also compared accepted and non-accepted children relative to achievement. She studied the relationship between the social structure of kindergarten and fifth-grade rooms and academic success. The purpose of her study was "to determine whether or not those children who are accepted by their peers differ in certain achievements from those who are rejected." Using sociometric measures, two questionnaires, an intelligence test and a readiness test, she concluded: ". . . it may be said that in general those students who are succeeding in their school work will also be succeeding in their social relationships with their peers." She tentatively suggested that academic achievement precedes rather than follows social acceptability. In a similar study, Edward Henry Henderson (1958) found a statistically significant relationship between social status and academic achievement. In his study, he found this relationship to exist at the .01 level of significance. This relationship between academic performance and sociometric status was also investigated and found to exist by Laughlin (1954) and Northway (1944).

Amidon and Hoffman (1963) commenting on the relationship of social isolation and achievement said:

> Often the isolate is a child who is academically below average in the class. His low achievement level may be a contributing factor in his rejection by the class or low achievement may be a partial result of rejection.

In a study by Porterfield and Schlichting (1961), a relationship between peer prestige and status in reading achievement was found to be significant at the .05 level. The authors concluded:

> Consequently, on the basis of these data, the tentative conclusion that the relationship of peer prestige status and reading achievement status is significant appears justified. Of the 20 isolates discovered in this study, 13 were retarded in reading,

five were accelerated, and only two were in the normal range. Obviously, the ability to excel in reading is not as important as other possible factors in being socially acceptable or in gaining leadership status in the area of sports in the lower socio-economic communities.

Dean O. Stevens (1971) too, found a significant relationship between reading achievement and social status. Like Buswell, Stevens suggests a causal relationship between reading achievement and peer rejection. Stevens concludes:

> Self-esteem and the esteem of others are in jeopardy when the child suffers from failure. Children identified as remedial readers will not be as socially well-accepted as their classroom peers. . . . The data do support the conclusion that the remedial readers in this study are not socially well-accepted in their classrooms. Furthermore, these children apparently know 'their place' and the place of their other classmates who are both remedial and non-remedial.

The generalizability of such a correlation to all groups in our society must not be made. Lobov and Robins (1969) found just the converse of the studies mentioned previously. In their study conducted in Harlem, New York, high status ghetto children did not read as well as their classmates. Lobov and Robins feel this phenomenon is the result of ghetto gang pressure not to do well in school-related activities.

Self-esteem and the Isolate Child

The socially isolated child tends to have a low sense of personal worth. As was mentioned previously, Dean O. Stevens (1971) feels that the loss of self-esteem suffered by low achievers parallels his loss of social status. Guardo (1969) found a positive linear re-lationship between sociometric status and positive self-concept. In this study, Guardo found a strong positive relationship between negative sociometric status and poor self-concept. He concluded his

report by stating, "The reported correlations supported the general notion that sociometric status and self-concept are positively and linearly related." Coopersmith (1959) too, found a similar correlation. In his study using 102 fifth and sixth graders, a correlation of .37 was found between self-esteem and sociometric status. In another study conducted by Horowitz (1964), a significant correlation between socio-metric status and self-concept was found using a group of fourth graders. However, no significant correlation was found for the sixth graders in the study.

Waisman (1962) found that the low status young adolescents he studied were quite aware of their rejection and in turn modified their own attitudes toward themselves to reflect the opinions others had of them. Porterfield and Schlichting (1961) also felt that low peer prestige status children tend to possess a low sense of personal worth. This contention is further supported by the research of McClelland and Ratliff (1947). They found that students identified as social isolates frequently scored high on the California Personality Test in the sub-test area of Anti-Social Tendencies.

The Isolate Child's Attitude Toward School

Donald E. Guinouard and Joseph F. Rychlak (1962) commented: "Students who are not accepted and are rejected tend to dislike school and tend to be achieving below grade level." Certainly if school drop-out rate can be used as an indicator of a general dislike of school, low status students would qualify as students who dislike school. In a study by Barclay (1966), 900 sociometrically tested students were followed for four years. At the end of that period, it was discovered

that 65 percent of the male dropouts had been earlier identified as being in the cell of maximum social rejection. In the case of the female students, 54 percent were from that cell.

Summary

In this preceding section, a number of research studies as well as the opinions of writers were reviewed regarding the low academic achievement of low social status children. In general, low social status children are not succeeding in their school work. Too, low social status children tend to be remedial readers. Except possibly in ghetto areas, the high achievers in our schools tend to be high social status children. The socially isolated child tends also to have a low sense of personal worth. This relationship of self-esteem and social status has been found to be linear. In fact, low social status children will actually modify their opinion of themselves to reflect the opinions others have of them. Finally, low status children tend to dislike school and have higher dropout rates than their classmates.

ATTEMPTS TO REDUCE SOCIAL ISOLATION

The literature relating to the attempts to reduce social isolation of children in the schools is discussed below under three headings. These sections deal with the following: (1) reducing social isolation through counseling, (2) reducing social isolation through teaching techniques, and (3) reducing social isolation through teaching organization.

Reducing Social Isolation Through Counseling

A number of attempts have been made to reduce the degree of

social isolation of isolate children through counseling. Mayer,
Kranzler and Matthes (1967) randomly assigned 87 identified isolates
and fringe isolates to three treatment conditions: (1) counseling, (2)
teacher-guidance, and (3) control. When the treatment results were
compared, no statistically significant differences were found among
them. In a study by Frank Biasco (1965), the effects of individual
counseling, multiple counseling and teacher guidance upon the socio-
metric status of children in the fourth, fifth and sixth grades was
examined. He too, found no statistically significant differences
between the experimental groups and the control groups.

Siddiqi (1967) investigated the dependency and hostility
responses of counselees related to changes in their sociometric status.
He found no statistically significant difference between the mean scores
of the counseled students and the control group. However, he did find
a greater variance of scores. He concluded that such a variance in-
dicated counseling does have an effect on sociometric status but that
this effect may be for the better or worse.

Munger, Winkler, Teigland, and Kranzler (1964), in a study in-
volving fourth grade underachievers, found no differences between their
counseled and non-counseled subjects regarding change in sociometric
status. Munger, Winkler, Teigland and Kranzler used individual counsel-
ing as their only treatment. In another study by Kranzler, Mayer, Dyer,
and Munger (1966) two years later, they combined individual counseling
with group counseling. Using this multiple treatment, the authors were
able to reject the null hypothesis concerning differences between
counseled and non-counseled students. The authors felt that their
results indicated that the students who received counseling became more

accepted and liked by their classmates than similar non-counseled students.

To the technique of group counseling, Hansen, Niland and Zani (1969) added the concept of model reinforcement. In their study, three groups were established, (1) group counseling with model-reinforcement, (2) group counseling without models, and (3) control. In the model-reinforcement groups, high sociometric status students were added to the counseling group to act as models. In the non-model-reinforcement groups, only low sociometric students were present. The authors found the sociometric scores of those low status students in the model-reinforcement groups to be significantly higher than those of the low status students in the counseling or control groups.

A more recent study conducted by Richard W. Warner, Jr. (1971) compared the effects of model-reinforcement and verbal reinforcement in group counseling on overt behavior of alienated students. In this study, those students who participated in the model-reinforcement group counseling received behavior ratings slightly better than those students participating in the verbal-reinforcement group counseling.

Reducing Social Isolation Through Teaching Techniques

Numerous teaching techniques have been suggested to teachers as possible aids in reducing the degree of social isolation of the socially isolated child. When tested statistically however, no teaching technique has been shown to be effective in reducing social isolation. Long (1958) as an example, found no statistically significant difference between the sociometric scores of isolate children in classes using the technique of role playing and those not using that technique.

Bonney (1971) has done the most comprehensive study of the effect of what he calls "procedures and experiences" on the reduction of social isolation. In his study, the following techniques were statistically tested to determine what effect they had on social isolation:

Procedures and Experiences

1. Collaborative efforts with two or more other pupils in free activity period - solving a puzzle, making a bulletin, playing a game, or in a work group project

2. Interview with a parent about child's adjustment in school and how the parent could help

3. Participated well, or fairly well, in class dramatization or role playing in classroom or auditorium

4. Made a creditable showing in some performance before the class, as in art, music, physical education, or in oral report

5. Brought some kind of object, pet, or book to class and shared it with other pupils

6. Teacher exerted influence with child or parent to get child in a community group, or to invite other children into the home

7. Special class assignment by teacher - passing out materials, helping another child, doing a room chore, being chairman of a group

8. Successful part in talent show or hobby show

9. Commended by teacher before class for exceptional test score, or other form of academic superiority, or name put on bulletin board

10. Chosen by pupils for a minor class office - row captain, secretary, chairman of committee, or one to give a report

11. Seated near or placed at same table with others he chose - sometimes with others of high choice status

12. Gave an acceptable suggestion in a class discussion

13. Put on a timed schedule to help finish work on time - keeping chart, records, holding to a deadline

14. Teacher conference with child about his behavior or work

15. Involved in a cooperative, friendly, activity with one other child - not assigned work

16. Class discussion of particular kinds of personal - social problems (initiated by teacher)
17. Went to individual play therapy or counseling session

Bonney reported that all group differences between the experimental and control groups comparing social status scores were insignificant. He concluded: "School personnel are warned against assuming that most socially low pupils can be aided by socializing experiences."

Brown (1955) compared the characteristics of a group of socially accepted students with those of students who were not accepted by their peers. He hoped to help socially isolated children by intensively studying the differences between the two groups. He felt that students could improve their sociometric status if: (1) socially rejected girls who were doing poorly in school were told that popular girls do better in their school work, (2) socially rejected adolescents were encouraged to join school clubs and enter into extra-school organizations, (3) counselors helped socially rejected students determine which organizations would be especially appropriate to their particular interests and talents, (4) socially rejected boys were led to understand that remunerative employment may contribute to their social acceptance, and (5) teachers would strive to help students avoid aggressive objectionable behavior.

Brown also stated that he has found that two simple techniques have been repeatedly successful in improving social acceptance of socially rejected students. They are: (1) providing very wide opportunities for pupils to do something in which they may experience frequent success, and (2) encouraging situations (such as membership in various organizations appropriate to the given individual's interests and talents)

which will enable members of the group to become acquainted with the rejected student as a real, individual person. Brown did not statistically test any of the above suggestions but believes: " . . . there is no doubt that adolescents can be helped to win social acceptance, regardless of previous rejections."

Reducing Social Isolation Through Teaching Organization

Efforts have been made to examine the effects of "new" classroom organizational approaches on the reduction of social isolation. Two of the most recent major organizational changes in the schools have been the non-graded organizational structure at the elementary school level and the core approach at the elementary and secondary level. In a study by John Richard Zerby (1960), a nongraded school and a graded school were compared using the factors of achievement and social adjustment. Zerby found no statistically significant difference between the nongraded school and the graded school in social adjustment as measured by sociometrics.

In another study on the nongraded school, Saunders (1970) examined the relationship of emotional disturbance and social status. He found that the relationship Glidewell (1966) found to exist in the graded school between these factors did not exist in the nongraded school he studied. Apparently, social status is to some extent, altered by the nongraded organizational structure. Saunders concluded:

> The results of this study indicate that the relationship between classroom structure and mental health reported by Glidewell (1966) does not necessarily exist within the non-graded classroom. Apparently, certain as yet non-delineated variables operate within the non-graded classroom that do not operate, or operate in a qualitatively different manner, in the self-contained class.

Examining the effects of the core organizational structure on peer acceptance, Forlano (1964) found a statistically significant gain in peer acceptance on the part of the core pupils when compared with noncore pupils. The findings on interpeer relations were based on the results of 76 pairs of core and noncore pupils utilizing the Revised Ohio Social Acceptance Scale.

Summary

In this preceding section, a number of research studies were reported upon regarding the effect of counseling on the reduction of social isolation, the effect of teaching techniques on the reduction of social isolation and the effect of changes in classroom teaching organization on the reduction of social isolation. In counseling, only group counseling with model-reinforcement showed any statistically significant effect on the reduction of social isolation. No teaching techniques thus far used have shown any statistically significant effect on the reduction of social isolation. The nongraded organizational structure appears to have some effect on peer status. However, the findings are inconclusive and contradictory. The only study examining the relationship of peer status and core organization suggests that core does reduce the degree of social isolation of the isolate child.

THE EFFECT OF TEAM LEARNING ON SOCIAL ISOLATION

The literature relating to the use of team learning as an effective tool in reducing the degree of social isolation in the elementary school classroom is extremely limited. The little research that has been done relative to team learning is related to its effectiveness

as an alternative teaching method for greater academic achievement. In this light, the results have been mildly favorable but mixed. Durrell (1971), Graffan (1964), Durrell (1961), Birney and McKeachie (1955) and Pearl (1967) all found team learning groups to have significantly higher academic achievement than groups not using team learning. On the other hand, Richard Francis Lindgren (1965) in a study comparing team learning groups' academic achievement with groups taught using conventional teaching methods found no statistically significant difference in their achievement.

Some research to determine the effect of team learning on sociometric status has been done. Barclay and Jackson (1966) paired high and low sociometric status children for the purpose of competitive task-oriented assignments where cooperation was mandatory for winning. Selective reinforcement patterns were also used in the classroom settings. This approach resulted in substantial alteration of the sociometric status of the individuals rewarded.

In a study on group success and failure and social status, Ashmore (1962) found when children already known to each other were placed in smaller groups working on common goals, their social ratings of each other tended to rise. Such improvements in sociometric scores occurred regardless of the nature of the experience. Ashmore also reported that his results continued to hold true one month later.

In Durrell's Dedham Project, social distance scales were administered to children as well as achievement tests. Durrell found that the scales used revealed no statistically significant changes in social status.

Three writers have speculated on the effectiveness of team

learning as a method for reducing social isolation. Howe (1971) writes:

> A third major advantage is that students gain
> important interpersonal skills. The critique which
> follows the task activity provides each student with
> insight and feedback about his performance as a team
> member. In this way, positive performance can be
> reinforced and weaknesses strengthened.

Amidon and Hoffman (1963) suggested that the socially isolated child be assigned to a work group. They concluded:

> If the child can be placed in a small work group
> in the classroom, he may have an opportunity to
> develop close relationships with some of the other
> children. The work group, which should be selected
> with great care, should include when possible at
> least one child who has chosen the isolate on a
> sociometric questionnaire. Further, the isolate
> should not be placed with any child who openly
> rejects him. Placement in a work group can be
> especially helpful for the shy child. The teacher
> might put him in a group with two or three rather
> passive children to maximize his participation.

Commenting on the value of team learning as a method for improving social relations, Gerard A. Poirier (1970) stated:

> What happens to peer relationships in the team
> learning classroom? Because the teacher can adapt
> the team learning system to his own classroom situation,
> he can assist the growth of firm peer relationships.
> Weak students usually relate to the leaders of their
> teams, for example. And in general, latent qualities
> in students can be brought out through the relationships
> they develop within their teams. Further the teacher
> is in a position to help students who might have
> difficulty in relating well to their peers since he
> has already studied his students at length as described
> in Step One of team learning and can place the difficult
> students in compatible teams.

. . . .

> . . . The increased participation in a wide range
> of roles within a group gives each member a chance to
> develop his self-concept and hence, improve his
> relationship with others. Thus, if a group is rightly
> structured and handled, there is great potential for
> the development of favorable attitudes and increased
> participation in a wide range of roles by many class

members.

. . . .

The micro-societies of team learning are really
miniature democracies. Each small team learning group,
e.g., five members, is like a hand and each member is
a finger. When fingers work together, the whole hand
benefits. In sociological terms, the student within
the class is given a chance to cope with problems, to
learn in small societies which prepare him for the
outside world.

. . . .

How can sociological needs in the classroom be
satisfied? Team learning can achieve a better fit, a
greater harmony, and a more understanding relationship
between the learner and teacher, the peer group,
the activity, or the common purpose within the micro-
society.

SUMMARY

The second chapter of this report reviewed the research and

literature pertaining to the study in four specific areas: (1) charac-

teristics of the isolate child, (2) the behavior of the social isolate,

(3) attempts to reduce social isolation, and (4) the effect of team

learning on social isolation.

From the review of the literature relative to the characteristics

and behavior of the isolate child, the researcher concluded that the

socially isolated child tends to have characteristics unlike his so-

cially accepted peers. The characteristics he does possess are those

which are often considered less desirable by his peers. They include

being less intelligent, less emotionally stable, more anxious, more

anti-social, more introverted, less neat, less attractive and finally

less academically successful.

Regarding attempts to reduce social isolation, the investigator

concluded from his review of the literature that most efforts to reduce the degree of social isolation of the isolate child have failed. All teaching techniques used to reduce social isolation have failed. With the possible exception of group counseling with model reinforcement, all counseling used to reduce social isolation has failed. Attempts to reduce social isolation through organizational pattern of the class has been inconclusive and contradictory. The nongraded organizational pattern and the core pattern have shown some limited success, but the results are far from conclusive. Finally, some writers feel that team learning holds promise as a possible aid in reducing the degree of social isolation of the isolate child. However, no statistical re- search has been done testing the effect of team learning on social isolation.

The investigator concluded from his review of the related lit- erature and research that an experimental study testing the effects of team learning on social isolation of elementary school children would make a useful contribution toward ultimately finding a method useful in reducing the social isolation of the isolate children in our schools.

The research design and the procedure used in the present study will be presented in chapter 3.

CHAPTER 3

THE DESIGN AND PROCEDURE OF THE STUDY

The design and procedure of the study will be presented below in a detailed format under sections dealing with the following: (1) the setting of the study, (2) identification of the population, (3) teacher inservice training, (4) Poirier's team learning procedure, (5) research design and testing instrument, and (6) statistical procedure and hypotheses.

SETTING OF THE STUDY

The setting of the study was the geographic area within a one hundred mile radius of the San Francisco Bay. A total of six school districts was used. Four of the districts were in suburban communities while two were small cities surrounded by farm land. Specifically, the school districts were: The Davis Unified School District; The Rincon Valley Elementary School District, Santa Rosa; The Lafayette Elementary School District; The Saratoga Elementary School District; The Santa Clara Unified School District; and the Orinda Elementary School District. They had a combined enrollment from kindergarten through sixth grade of 24,420. The total number of elementary schools in these districts combined was 54. Although three of the school districts had lower income neighborhoods, none of the districts had true inner city ghetto areas. Generally speaking, the study was conducted in middle class

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communities.

To initiate the study, the superintendents of each of these districts were asked permission to allow one to two schools from each of their respective school districts to participate in the study. It was explained that the selection of the school, the grade level and the class would all be done randomly. All agreed to allow the study and to cooperate in the randomization process.

IDENTIFICATION OF THE POPULATION

From the student population of the six school districts, the investigator delimited a more specific group which was to participate in the study. Delimitations included: (1) schools, (2) grade level and (3) experimental and control classes. During the school delimiting process, data were collected on the children of the schools selected. That data will be included under the heading, Selection of Schools.

Selection of Schools

By the use of a table of random numbers, nine schools were chosen from the original 54. All first choices in the randomization process for the selection of schools were accepted by the administrators contacted with the exception of Santa Clara. In Santa Clara, the first school selected was already involved in a research project. The assistant superintendent rejected the use of the school and a second school was selected at random.

In order to have a greater understanding of the children to be included in the experiment, additional information about the children in the schools selected and their families was gathered using school

records and United States Bureau of the Census data. This information included: (1) the average intelligence quotient of each school's sixth grade, (2) the reading achievement scores of each school's sixth grade, (3) the average mathematics achievement scores of each school's sixth grade, (4) the total number of students at each school, (5) the racial makeup of the students at each school, (6) the percentage of families falling into specific income categories, (7) the education level of the adult males in each family, (8) the percentage of men classified as professional in each school's attendance area, (9) the percentage of adults unemployed in each school's attendance area, (10) the percentage of adults with incomes below the 1970 federal poverty level in each school's attendance area and, (11) the median value of the homes in each school's attendance area. A brief description of each school follows:

School A. School A is located in a wooded suburban community outside a large city. Although there are less expensive homes located near the center of town, most of the homes in this community are expensive, with a 1970 median value of $44,400. Approximately 90 percent of the fathers of the children in this school are executive or professional men. The 1970 median income of the residents in this attendance area was $21,785. The 1970 median education level of the adults in this school's attendance area was 16.3 years. The percent of adult males ages sixteen through twenty-one who were not high school graduates or currently attending high school was less than 1 percent. Three percent of the adult males over the age of sixteen was unemployed. The percent of adults with incomes below the 1970 federal poverty level was 4.3.

School A has approximately 390 students. Ninety-six percent of these students are White. The school district of which School A is a part is a small elementary school district serving a total of 2,361 kindergarten through sixth grade children. The school records indicate that the average reading achievement of its sixth graders as measured by the Stanford Achievement Test is 7.6. The average mathematics achievement is 6.9. The average sixth grade I.Q. in the school as measured by the Lorge-Thorndike Intelligence Test is 115. One control and one experimental class were selected at random from this school.

School B. School B is located in a suburban community outside a large city. The homes in this community had a 1970 median value of $35,800. The 1970 median income of the residents in this school's attendance area was $18,284. Approximately 62 percent of the fathers of the children in this school are professional men. The 1970 median education level of the adults in this school's attendance area was 13.5 years. The percent of adult males ages sixteen through twenty-one who were not high school graduates or currently attending high school was 3.6. One and one-half percent of the adult males over the age of sixteen was unemployed. The percent of adults with incomes below the 1970 federal poverty level was 2.3.

School B had approximately 365 students. Ninety-eight percent of these students are White. The school district of which School B is a part is a small elementary school district serving a total of 2,643 kindergarten through sixth grade children. The school records indicate that the average reading achievement of its sixth graders as measured by the Stanford Achievement Test is 7.2. The average

mathematics achievement is 6.1. The average sixth grade I.Q. in the school as measured by the <u>Lorge-Thorndike Intelligence Test</u> is 105. Three control and three experimental classes were selected at random from this school.

School <u>C</u>. School <u>C</u> is located in a university community of about 25,000 residents approximately twelve miles from a moderately large city. The homes in the community have a 1970 median value of $36,000. The 1970 median income of the residents in this school's attendance area was $16,866. Approximately 73 percent of the fathers of the children in this school are professional men. The 1970 median education level of the adults in this school's attendance area was 14.6 years. The percent of adult males ages sixteen through twenty-one who were not high school graduates or currently attending high school was 9.8. The percent of the adult males over the age of sixteen who were unemployed was 2.3. The percent of adults with incomes below the 1970 federal poverty level was 4.6.

School <u>C</u> has approximately 664 students. Eight-five percent of the students are White, 10 percent are Mexican-American while the remaining 5 percent are Black and Oriental. The school district of which School <u>C</u> is a part is a medium sized unified school district serving a total of 3,055 kindergarten through sixth grade children. The school records indicate that the average reading achievement of its sixth graders as measured by the <u>Stanford Achievement Test</u> is 6.4. The average mathematics achievement is 5.7. The average sixth grade I.Q. in the school as measured by the <u>Lorge-Thorndike Intelligence Test</u> is 98. One control and one experimental class were randomly

selected from this school.

School D. School D is located in a suburban community outside a large city. The homes in this community have a 1970 median value of $41,700. The 1970 median income of the residents in this school's attendance area was $20,489. Approximately 81 percent of the fathers of the children in this school are professional men. The 1970 median education level of the adults in this school's attendance area was 15.5 years. The percent of adult males ages sixteen through twenty-one who were not high school graduates or currently attending high school was 1.9. Two and one-half percent of the adult males over the age of sixteen was unemployed. The percent of adults with incomes below the 1970 federal poverty level was 2.4.

School D has approximately 350 students. Ninety-seven percent of these students are White. The school district of which School D is a part is a small elementary school district serving a total of 1,947 kindergarten through sixth grade children. The school records indicate that the average reading achievement of its sixth graders as measured by the Stanford Achievement Test is 7.8. The average mathematics achievement is 6.8. The average sixth grade I.Q. in the school as measured by the Lorge-Thorndike Intelligence Test is 112. One control and one experimental class were randomly selected from this school.

School E. School E is located in a community of approximately 85,000 people in a rural area of the state. The homes in the community as well as the income of its residents runs the entire range from quite expensive homes and low income to expensive homes and high income. The neighborhood in which School E is located is one in which the homes are

valued above the average for the community as a whole. The United States census tract for the area indicates that the homes in this area had a 1970 median value of $23,600. However, the census tract includes more than one neighborhood and more than one school. Part of this area includes many new four and five bedroom homes. This section is served by School E. The 1970 median income of the residents in this census tract area is $11,053. Again, this may be lower than that of the families of the children actually attending School E. The principal of School E estimates that the income of the residents in his school's attendance area to be much higher at $16,800. Approximately 52 percent of the males in this census tract area are professional men. The 1970 median education level of the adults in this census tract area was 12.7. The percent of adult males ages sixteen through twenty-one who were not high school graduates or currently attending high school was 6.0. The percent of the adult males over the age of sixteen who were unemployed was 4.4. The percent of adults with incomes below the 1970 federal poverty level was 6.3.

School E has approximately 410 students. Ninety-five percent of these students are White. The school district of which School E is a part is a small elementary school district serving a total of 3,183 kindergarten through sixth grade children. The school records indicate that the average reading achievement of its sixth graders as measured by the Stanford Achievement Test is 5.5. The average mathematics achievement is 5.1. The average sixth grade I.Q. in the school as measured by the Lorge-Thorndike Intelligence Test is 103. One control and one experimental class were randomly selected from this school.

School F. School F is located in a community of approximately 85,000 people in a rural area of the state. The homes in the community as well as the income of its residents runs the entire range from quite inexpensive homes and low income to expensive homes and high income. The neighborhood in which School F is located is one in which the homes are valued slightly below the average for the community as a whole. The United States census tract for the area indicates that the homes in this area had a 1970 median value of $23,000. However, the census tract includes more than one neighborhood and more than one school. Part of this area includes many small homes over twenty years old. This section is served by School F. The 1970 median income of the residents in this census tract area is $11,053. This seems reasonable since the principal of School F estimates the average 1973 income of the residents in his school to be $13,000. Approximately 52 percent of the adult males in this census tract area are professional men. The 1970 median education level of the adults in this census tract area was 12.7. The percent of adult males ages sixteen through twenty-one who were not high school graduates or currently attending high school was 6.0. The percent of the adult males over the age of sixteen who were unemployed was 4.4. The percent of adults with incomes below the federal poverty level was 6.3.

School F has approximately 443 students. Ninety-seven percent of these students are White. The school district of which School F is a part is a small elementary school district serving a total of 3,183 kindergarten through sixth grade children. The school records indicate that the average reading achievement of its sixth graders as measured

by the <u>Stanford Achievement Test</u> is 6.3. The average mathematics achievement is 6.1. The average sixth grade I.Q. in the school as measured by the <u>Lorge-Thorndike Intelligence Test</u> is 102. One control and one experimental class were randomly selected from this school.

<u>School G</u>. School <u>G</u> is located in a suburban community of considerable size outside a large city. The homes in the community as well as the income of its residents runs the entire range from quite inexpensive homes and low income to expensive homes and high income. The neighborhood in which School <u>G</u> is located is one in which the homes are valued at about average for the community as a whole. However, although they are newer homes, they are located in a less desirable area than other homes in the community of similar age and construction. In this neighborhood, the homes had a 1970 median value of $24,800. The median 1970 income of the residents in this school's attendance area was not available through United States census tract surveys but was estimated to be in excess of $14,000 by the school's principal. The principal also felt that the majority of the fathers of the children in this school are blue and non-professional white collar workers. This information too, was not available through census surveys. The 1970 median education level of the adults in this school's attendance area was 12.3 years. The percent of adult males ages sixteen through twenty-one who were not high school graduates or currently attending high school was 10.5. The percent of adult males over the age of sixteen who were unemployed was 4.6.

School <u>G</u> has approximately 570 students. Seventy-six percent of these students are White, 10 percent are Mexican-American, 8 percent

are Black and 5 percent are Oriental. The school district of which
School G is a part is a large unified school district serving a total
of 11,231 kindergarten through sixth grade children. The school records
indicate that the average reading achievement of its sixth graders as
measured by the Stanford Achievement Test is 6.1. The average mathe-
matics achievement is 5.4. The average sixth grade I.Q. in the school
as measured by the Lorge-Thorndike Intelligence Test is 103. One control
and experimental class were randomly selected from this school.

School H. School H is located in a wooded suburban community
outside a large city. Although there are less expensive homes located
near the center of town where School H is located, most of the homes
in this community are expensive with a 1970 median value of $44,400.
Approximately 90 percent of the fathers of the children in this
school are executive or professional men. The 1970 median income of
the residents in this attendance area was $21,785. The 1970 median
education level of the adults in this school's attendance area was 16.3
years. The percent of adult males ages sixteen through twenty-one who
were not high school graduates or currently attending high school was
less than one percent. Three percent of the adult males over the age
of sixteen was unemployed. The percent of adults with incomes below
the 1970 federal poverty level was 4.3.

School H has approximately 390 students. Ninety-six percent of
these students are White. The school district of which School H is a
part is a small elementary school district serving a total of 2,361
kindergarten through sixth grade children. The school records indicate
that the average reading achievement of its sixth graders as measured

by the Stanford Achievement Test is 7.6. The average mathematics ·
achievement is 6.9. The average sixth grade I.Q. in the school as
measured by the Lorge-Thorndike Intelligence Test is 115. One control
and one experimental class were randomly selected from this school.

School I. School I is located in a suburban community of con-
siderable size outside a large city. The homes in the community as well
as the income of its residents runs the entire range from quite inexpen-
sive homes and low income to expensive homes and high income. The
neighborhood in which School I is located is one in which the homes are
valued at below average for the community as a whole. The school is
located in an older section of the community in the center of town. In
this neighborhood, the 1970 median value of the homes was $16,000. The
1970 median income of the residents in this school's attendance area
was $7,004. Approximately 27 percent of the fathers of the school
children in this school are professional men. The 1970 median education
level of the adults in this school's attendance area was 10.9 years.
The percent of the adult males ages sixteen through twenty-one who were
not high school graduates or currently attending high school was 24.4.
The percent of the adult males over the age of sixteen who were unem-
ployed was 12.8. The percent of the adults with incomes below the 1970
federal poverty level was 19.0.

School I has approximately 328 students. Sixty-five percent of
these students are White, 35 percent are Mexican-American. The school
district of which School I is a part is a large unified school district
serving a total of 11,231 kindergarten through sixth grade children. The
school records indicate that the average reading achievement of its

sixth graders as measured by the Stanford Achievement Test is 5.7. The average mathematics achievement is 5.3. The average I.Q. in the school as measured by the Lorge-Thorndike Intelligence Test is 97. One control and one experimental class were randomly selected from this school.

The information gathered about the parents of the children in this study is presented in Table 1. The information gathered about the school characteristics of the schools used in this study is presented in Table 2.

Selection of Grade Level and Experimental and Control Classes

The investigator chose the third, fourth and fifth grades as the level of students who were to participate in the study. He made this selection because extensive work by Gerard Poirier using Poirier's team learning in the San Francisco Bay Area indicates that team learning is less successful in grades below the third. Since the study is examining the effect of Poirier's team learning on social isolation, the sixth grade was also eliminated since many students enter puberty in the sixth grade and their social behavior begins to change, thus introducing another variable.

Using a table of random numbers, the grade level for each school was selected. A table of random numbers was also used to determine the experimental class and the control class.

After the grade level selection and class selection process were completed, each principal of the schools selected was contacted and his permission obtained. It was explained to each of the principals that two or more teachers would be needed for the study from his school and that those teachers had already been selected at random. It was further

Table 1

Characteristics of the Parents of the Children in the Study Relative
to Education, Income, Unemployment, Occupation and Poverty
Level as Revealed in the 1970 United States Bureau
of the Census Census Tract

	School A	School B	School C	School D	School E	School F	School G	School H	School I
Median School Years Completed	16.3	13.5	14.6	15.5	12.7	12.7	12.3	16.3	10.9
Percent of Males Ages 16-21 Not High School Graduates and Not Enrolled in Schools	0	3.6	9.8	1.9	6.0	6.0	10.5	0	24.4
Family Income (median)	$21,785	$18,284	$16,865	$20,489	$11,053	$11,053	*	$21,785	$7,004
Percent Unemployed (16 years old and older)	3	1.5	2.3	2.5	4.4	4.4	4.6	3	12.8
Occupation: Percent of Professionals Falling into the Census Tract Column, "professional, technical, engineers, physicians, dentists, health workers, teachers, technician, other professionals, managers and administrators	90	62	73	81	52	52	*	90	27
Percent of Persons with Income Below the 1970 Federal Poverty Level	4.3	2.3	4.6	2.4	6.3	6.3	*	4.3	19.0

* Information not available

Table 2

School Characteristics Relative to the Average Sixth Grade Reading and Mathematics
Achievement Scores, Average Sixth Grade Intelligence Scores, Student Ethnic
Composition, and General Classroom Organization Used

	School A	School B	School C	School D	School E	School F	School G	School H	School I
Average Sixth Grade Reading Achievement Score (grade equivalent)	7.6	7.2	6.4	7.8	5.5	6.3	6.1	7.6	5.7
Average Sixth Grade Mathematics Achievement Score (grade equivalent)	6.9	6.1	5.7	6.8	5.1	6.1	5.4	6.9	5.3
Average Sixth Grade I.Q.	115	105	98	112	103	102	103	115	97
Racial Make-up (percent)									
White	96	98	85	97	95	97	76	96	65
Black	1	0	3	1	1	1	8	1	0
Oriental	1	1	2	2	1	1	5	1	0
Mexican/American	2	1	10	0	1	1	10	2	35
Other	0	0	0	0	2	0	1	0	0
General Classroom Organization Used	self-contained	self-contained	self-contained	self-contained	self-contained	self-contained	self-contained	self-contained	self-contained

explained that the teachers of the classes randomly selected to be the experimental groups would receive extensive inservice training in the principles of Poirier's team learning.

A meeting was arranged between the researcher and each experimental group teacher. A total of twenty-two meetings was held. At each meeting, the teacher was asked to cooperate in instituting Poirier's team learning in his class. He was given a brief review of the concepts of team learning. The subject of student social isolation was not discussed. The researcher did explain, however, that some short tests would be given in late February or early March.

After hearing what would be asked of them, all teachers agreed to participate in the study.

Dates were set for inservice meetings on the techniques of Poirier's team learning with all teachers of experimental groups.

TEACHER INSERVICE TRAINING

Inservice training sessions for each of the teachers of experimental classes in the study were organized. It was determined that a minimum of six hours of inservice would be needed to adequately train a teacher in the basic principles and techniques of Poirier's team learning. Dates were selected which met the mutual needs of the teacher and the researcher. Since the experimental classes were in six different districts and nine different schools, it was necessary for separate inservice sessions to be held in each district. Three two-hour sessions were planned for each district. The first inservice session included instruction in the following areas:

1. General review of the principles of Poirier's team learning

2. Discussion of the basic classroom organization of Poirier's team learning

3. Discussion of the advantages of Poirier's team learning

4. Reading assignment given (Students as Partners in Team Learning, Gerard Poirier)

The second two-hour inservice session included instruction in the following areas:

1. Discussion of the reading assignment

2. How to choose team leaders

3. Seating arrangements

4. Introducing team learning to the class

5. Selecting of academic subject to initiate team learning

6. Competition

7. Recording points earned in competition

8. Rewards

9. Classroom atmosphere

The third two-hour inservice session included instruction in the following areas:

1. General discussion of each teacher's progress in implementing Poirier's team learning

2. A question and answer period to solve any problems that may have arisen since the last meeting

3. A discussion of additional academic subjects that now should be added to the team learning approach

4. A discussion on games that can be helpful in building a positive, constructive relationship among team members (introduce Sid Simons' Value Clarification)

After the final inservice session, an additional date was made with each of the teachers to visit the class while it was in session

to observe the teams in action. At that time, additional suggestions were made to each teacher regarding the team learning process in his class. The researcher considered team learning successfully instituted when the class had:

1. Balanced learning teams of four or five children each

2. Each team sitting together led by a team leader

3. Each team in daily or weekly activities with cooperative competition between teams for rewards

4. A minimum of two subjects taught primarily using the technique of team learning

5. A minimum of one classroom atmosphere activity taught using the technique of team learning

6. A point system established to record results of the competition

POIRIER'S TEAM LEARNING PROCEDURE

The team learning procedure used in the study is discussed below under the following headings: (1) the team learning concept, (2) organizing the classroom for team learning, (3) team learning's cooperative competition and its rewards.

The Team Learning Concept

Team learning is a system of teaching which endeavors to reach and teach the individual student within the climate of the classroom through "family units" or teams. Each team is responsible for learning tasks either by producing a joint product or by fulfilling individual responsibilities for which one can earn credit for the team as a whole. These learning teams of about five students per team are in cooperative-competition with one another and usually compete for rewards. Poirier

feels that children so placed in learning teams show a greater desire to learn than children in a classroom using linear teaching. He attributes this to the stimulation of competition and to the aid each learner receives from his peers in his team.

Poirier further feels that team learning provides a means of individualized instruction through the use of peer teaching. Although team learning is not used exclusively during the school day, many activities can be done using a team approach. Members of the team are encouraged to help one another with their work. Since the team as a whole is rewarded for its work, it is to the advantage of its members to aid one another. This is expedited through the team leader of each team.

Organizing the Classroom For Team Learning

Poirier lists eleven steps in organizing the classroom for team learning. These steps are:

Step one: identifying the "family members". Step one is diagnostic in nature and includes assessing each student's academic, creative and social capabilities. The identification of students for placement in the family units is done primarily by teacher awareness. Students' names are placed on 3 x 5 cards which are used to aid the teacher in selecting students for each team. A score is placed on each card ranking the student in each of the areas of academic, creative and social capability. Equal numbers of students strong in each of the above capabilities are then placed in each team. If the teacher wishes, additional information can be put on the identification card for each class member, such as (1) frequently absent, (2) daydreams often,

(3) weak in oral work, (4) immature, (5) boisterous, (6) speaks out of turn, (7) sporadic homework, (8) shy, (9) few friends, (10) reliable.

With the information gained through the class analysis, the teacher has the means for dividing the class into balanced families or teams, each with a leader, co-leader and other members. Poirier feels that the best way to select team leaders is through teacher awareness.

Step two: structuring the team. Since a team must have esprit de corps as well as heterogeneous balance in order to be successful, the teacher must consider the group dynamics of each group. Poirier recommends that he consider the group makeup for at least a week before finalizing them. If the teacher does not feel that the strengths and weaknesses of each family unit are well matched, changes should be made. Poirier feels that one of the surest ways to destroy the cooperative-competitive spirit within a class where long-range grouping is employed is to allow one team constantly to overpower all others.

Step three: preparing the leaders for acceptance of role. Special steps must be taken to inform the teacher-selected leaders about their new assignment. Poirier feels that students may avoid leadership responsibilities if informing them of their impending selection is not handled well by the teacher. In addition to making sure each leader is spoken to privately and during a time which offers no conflict with the student's schedule, Poirier (1970) suggests teachers remember that:

1. Students in general are frequently prone to shy away from responsibility

2. He should make use of the idea of experimentation in appealing for acceptance of the role of leader

3. He should draw upon the spirit of cooperative-competition.

4. He should indicate that the assignment may be of short or long duration depending upon the ability of the leader to maintain a "classroom atmosphere" within the team

5. He should stress the amount of selectivity involved in choosing the leader

6. He should try to assure that no one reject the position of leader using the "just give it a try" approach

7. In a word, he should use any approach which may appeal strongly to the designated leaders

8. And finally he should ask the leaders to keep the matter confidential until the entire class has been given the opportunity to hear about the experiment.

Step four: preparing the class for acceptance of method. The team leader has been selected in part because of his or her influence over the other students in the class. The leader is a peer pivot, the point of gravitation to which other peers are drawn. In introducing the concept of team learning to the class as a whole, this relationship of the leader to the class is utilized. In Poirier's team learning, the teacher is encouraged to use the leaders in his presentation to the class explaining the concept of team learning. In the presentation, the teacher explains the concept and operation of team learning to the students. Poirier (1970) suggests that a "pep-talk" be given delineating in well-chosen words the function of team learning, using such catch phrases as:

1. Maximum learning with minimum effort

2. Add fun to your learning

3. Excelling through team work

4. Learning by seeing done

5. Learn more without exerting more effort

Step five: physical arrangement of the classroom. The furni-
ture used in Poirier's team learning is individual student desks ar-
ranged in clusters of four or five. Each cluster of desks is for the
use of each learning team. When the team is given an assignment which
requires it work together, the desks are pushed together. Poirier terms
this pushing of desks together a "huddle".

Step six: awareness of the teacher's role. Poirier sees the
role of the teacher in team learning as that of an administrator. He
relegates to the members of the teams many of the tasks formerly per-
formed for them by the teacher and requires that the students take the
responsibility for learning, themselves. Although some lessons are still
presented to the class as a whole, many of the activities are individ-
ualized, each student working at his own level and at his own pace.
The teacher is there to help and instruct but so are the members of the
team. Students are encouraged to ask peers for help whenever needed.
When that fails, team leaders are responsible for calling the teacher
to the team for additional instruction and guidance. Thus, the leader
becomes the team's expediter while the teacher becomes a consultant on
call to each team.

Step seven: awareness of the leader's role. Poirier (1970)
feels that a good leader appreciates and understands the feelings of
the members of the team. He suggests that a leader should seek to:

1. Maintain the classroom atmosphere within his team

2. Assume responsibility for each member of his team

3. Develop concern for each member

4. Further the growth of empathy among team members

5. Permit each team member to express himself

6. Work with the teacher as an ally

7. Move toward self-enrichment

8. Implement the honor code in his team

Step eight: adaption of subject matter. In Poirier's team learning, it is suggested that subject matter be individualized as much as possible. It becomes the responsibility of the teacher to search out materials that lend themselves to such individualization and to assign the appropriate material to each child. Each student in turn may turn to his team mates for assistance in learning the material assigned. As always, the teacher is on call to all teams. Poirier recommends that subjects such as reading, mathematics and spelling, be individualized. Others like science and social studies can, at least in part, be done as a team. The teacher may ask that each member of a team be responsible for a segment of a larger project to be turned in by the team as a whole. If grades are given, Poirier recommends that each individual receive a grade for his own part in the project. However, points are usually also awarded to the team for the quality of the project as a whole. These points are often accumulated by the teams to be used by them in obtaining a reward.

Step nine: awareness of the adaptability of the system. Poirier believes that once a teacher becomes acquainted with team learning, he will begin to adapt it to many of the challenges and problems of the classroom. He suggests that team learning can aid a teacher in improving his classroom discipline, his students' self-

expression, the social position of social isolates in his class, his students' independence and finally, his students' attitude toward competition.

Step ten: functional evaluation. Poirier believes that team learning produces a greater amount of feedback relative to student achievement and ability than does the linear teaching approach. Since the teacher deals with only five or six teams rather than thirty or more students, he feels the "feedback loops" are shorter and more active thus giving the teacher more information of a more useful nature. Too, since each team leader acts as an expediter of the major learning needs of his team members, the teacher has a clearer picture of the real and urgent needs of all of his students.

Step eleven: parental and community involvement. Poirier feels that educating parents to the concepts of team learning is essential to the success of team learning. Team learning is often such a change from the educational experiences of the students' parents that they do not always understand or appreciate it. This is particularly true of its elements of competition, group learning and peer teaching.

Team Learning's Cooperative Competition and Its Rewards

Poirier feels that competition is part of the structure of our society. As a result, it cannot be excluded from the classroom. He feels that competition is present in the traditional classroom but is left unchecked thus bringing about problems difficult to resolve. Co-operative competition in Poirier's team learning classrooms is planned and structured. It is kept under control through scoring techniques,

reward devices and verbal and non-verbal praise. Too, it is encouraged in a setting where all competing teams are of equal ability and have an equal chance for success. Many of the activities are such that all teams can win and be rewarded since they are not team against team activities but rather team against task activities.

Cooperative competition was termed by Poirier to describe the nature of the competition in team learning. Each team must pull together if it is to be successful in its competition. Each member is important to the total effort. The team cannot achieve its goal without the co-operation of each team member. When they succeed, they all share in the reward and in the feelings of satisfaction. When they fail, Poirier feels their failure is spread over the entire team thus making it easier for each individual to accept failure.

In addition to there being two types of competition, (team against team and team against task) there can also be two periods of time for that competition. There can be short-term competition and long-term competition. In short-term competition, teams can be competing against one another for periods as short as only a few minutes. They are then rewarded quickly with some small but meaningful reward such as being first out to recess or being allowed to pick the game the class is to play at afternoon physical education time.

In long-term competition, teams can be competing against one another for periods as long as several weeks. The reward tends to be a much more highly prized one and is the result of the accumulation of points earned over the weeks from many separate activities. Such a reward might be the right to have lunch out with the teacher or the right to plan and put on the next class party or the right to a special

field trip not normally available to the students in the school.

RESEARCH DESIGN AND TESTING INSTRUMENT

The Research Design

Third, fourth and fifth grade pupils from twenty-two randomly selected classrooms were assigned to a Randomized Control-Group Post-test-only Design. According to Van Dalen and Meyer (1966) this design is especially useful when a pretest may interact with the treatment. Since a pretest might cause the teachers of the experimental classes in this study to behave differently toward social isolates identified in a pretest, this design was selected. The design consists of the last two groups in the Solomon design. Van Dalen and Meyer explain that it remains a rigorous design since randomization techniques permit one to declare that at the time of assignment the groups were equal. They also assert that the design controls the main effects of history, maturation and pretesting.

The Randomized Control-group Posttest-only Design consists of two groups to which classes are assigned at random. An experimental group is exposed to a treatment which, in the case of this study, is Poirier's team learning. The control group is not exposed to the treatment. During or after the exposure to the treatment, the two groups are tested for the first time. Their scores are compared to ascertain the effect of the treatment, and an appropriate test of significance is applied to determine whether this difference is greater than might have occurred by chance. The design is diagrammed below:

Group Assignment to the Research Design

A total of 313 pupils at nine schools were members of classes assigned to the control group. A total of 321 pupils at the same nine schools were members of classes assigned to the experimental group. All assignments were made using a table of random numbers.

	Pretest	Treatment	Posttest
(R) Experimental Group		X	T_E
(R) Control Group			T_C

Figure 1

Randomized Control-group Posttest-only Design
R = Random Assignment of Intact Groups to
Treatment; X = Experimental Variables
T_E and T_C = Posttest scores

Testing Instruments

The testing instrument used in the study to measure social isolation was the sociogram. The sociogram model was selected because it measures the number of social isolates and fringe isolates within a classroom. It also measures the intensity of rejection of the fringe isolate. For the purpose of this study, the Georgia Sachs Adams' survey and sociogram model was selected because: (1) it contained no negative questions, (With whom would you least like to play?) which might cause negative child and parent reactions, and (2) it was short and easy to administer in the context of the classroom. The Georgia

Sachs Adams' survey asks the following questions:

1. With whom would you like to sit?

      1st. _____

      2nd. _____

      3rd. _____

2. With whom would you like to work?

      1st. _____

      2nd. _____

      3rd. _____

3. With whom would you like to work on a committee?

      1st. _____

      2nd. _____

      3rd. _____

4. With whom would you like to play?

      1st. _____

      2nd. _____

      3rd. _____

Although there is no reliability coefficient for the Georgia Sachs Adams' sociometric survey, the questions in it are quite similar to those used by other sociometric surveys where reliability coefficients have been computed. Gronlund (1955) found an average stability co-efficient for his sociogram of .75 over a four-month interval when he studied groups of children in grades four through six. Bonney (1960) who has conducted several studies on stability of choices, found that stability coefficients obtained over a one-year period range from .67 to .84. Gronlund and Whitney (1956) obtained an average of .72 between the number of choices each student received as seating companion

(within the classroom) and the number he received as a future classmate (throughout the school). Chaires (1966) obtained a four day test-retest rank order coefficient of .74. Lilly (1971) found a six week test-retest reliability yielded a correlation coefficient of .82. A fairly recent study by Thompson and Powell revealed correlation coefficients of .86 over two administrations of the sociometric test given five weeks apart. Finally, Byrd, Damrin and Newstetter conducted test-retest studies which included time intervals varying from two to nine weeks. They reported correlations of from .70 to .89 with a median of .76. As might be expected, when the time interval between test and retest is increased, the degree of constancy of sociometric ranks is lowered.

Commenting on the consistency of choice from item to item of the sociogram itself, Adams (1964) said:

> When the consistency of sociometric status from one criterion to another has been studied, the correlations have naturally varied in some degree with the similarity of the criteria. In a study of 1,258 sixth-graders, by Gronlund, five choices were requested for each of three criteria: seating companions, work companions, and play companions. The intercorrelations among criteria ranged from .76 to .89. The highest correlations were between number of choices received as seating companion and as work companion; the lowest correlations were between work and play criteria.

When properly obtained according to Bonney (1960), sociometric data have validity for the following classroom uses:

> . . . (a) to form subgroups which are composed of persons who have indicated preferences for each other, (b) to study changes in interpersonal relations and in the social structure of a group over a particular time interval, (c) to determine the extent to which students of different racial, religious, and social-class grouping accept each other, (d) to locate individuals and small groups of individuals who are outstanding centers of influence in a particular population in order to utilize

their social prestige in the management of the group, and (e) to locate individuals who are isolates or fringers in order to plan some kind of assistance for them so they may achieve some degree of recognition and feeling of belonging.

Administration of the questionnaire was done by the researcher. Since children in the lower grades could not read fluently and since a uniform procedure was desirable, the questionnaire was read to all students in the study. The administration was conducted in as natural and informal a fashion as was possible. Children were asked not to discuss their choices among themselves. Each administration of the questionnaire was introduced to each class with the following statement: "I would like to know which children in this room each of you would like to work and play with. Would you tell me which children you would like to be with most? Your choices will not be mentioned to anyone else." The researcher then proceeded to read each of the questions and to explain where the names were to be placed on the questionnaire. Further explanation and examples were given following the reading of each question. Assistance was given to those children in need of it. The classroom teacher was present in all cases and was available to the children and in aiding them in spelling names they wished to place on the questionnaire.

HYPOTHESES AND STATISTICAL PROCEDURE

Hypotheses

The hypotheses, stated in null form, which the study determined either to accept or to reject included:

Hypothesis 1. Classes organized upon the principles and procedures of Poirier's team learning

will not have significantly fewer social isolates
in them as a result of team learning as measured by
sociometrics than classes not using Poirier's
team learning.

Hypothesis 2. Classes organized upon the principles and
procedures of Poirier's team learning will not have
significantly fewer social isolates and highly rejected fringe
isolates in them as a result of team learning as measured by
sociometrics than classes not using Poirier's team learning.

Hypothesis 3. Fringe social isolates in classes
organized upon the principles and procedures of
Poirier's team learning will not be significantly
less intensely rejected as a result of team learning
as measured by sociometrics than fringe social isolates
in classes not using Poirier's team learning.

Statistical Procedures

After the experimental classes had been taught using the

principles and procedures of Poirier's team learning for approximately

six months, an analysis of variance was computed using the means of the

scores earned by each class on the Georgia Sachs Adams' sociometric

survey. The analysis of variance was selected because its resulting F

ratio indicated whether or not the scores earned by fringe social

isolates in each group were significantly different from one another.

It is an appropriate statistical analysis since it allows its use with

interval scale data such as those presented.

The investigator chose to apply the chi-square statistical

analysis to the total number of social isolates found in the experi-

mental group and the control group. The chi-square statistical

analysis was selected as the appropriate statistical analysis since its

use is allowed with categorical data such as those presented. The re-

sulting chi-square score indicated whether or not the total number of

social isolates in the experimental group and the control group were

significantly different from one another. The same chi-square procedure was also used to determine whether or not the total number of fringe social isolates in the experimental group and the control group were significantly different from one another.

SUMMARY

The third chapter of this report reviewed: (1) the setting of the study, (2) identification of the population, (3) teacher in-service training, (4) Poirier's team learning procedures, (5) the research design and test instrument, and (6) the hypotheses and statistical procedures of the study.

Twenty-two classes located in six San Francisco Bay Area school districts were used in the study. All of these schools were located in suburban or small city neighborhoods unlike those found in a large inner-city area. Most of the children in the study were achieving at or above grade level in reading and mathematics.

Team learning procedures were introduced to the teachers of the experimental classes during three in-service class sessions. Further clarification of the principles of team learning was made during additional visits to each district.

A Randomized Control-Group Posttest-only Design was used in the study. The data collected using the Georgia Sachs Adams' sociometric survey was treated using either the analysis of variance or the chi-square.

The analysis of the data in the study will be presented in chapter 4.

Chapter 4

ANALYSIS OF THE DATA

INTRODUCTION

This experimental study incorporated the use of Poirier's team learning within third, fourth and fifth grade classrooms in an effort to reduce the degree of social isolation of socially isolated children. After exposing the eleven experimental groups to Poirier's team learning, both the experimental and control groups were given Georgia Sachs Adams' sociometric surveys and their scores compared to ascertain the effect of team learning on the rejection of isolate and fringe isolate children within the classes. An appropriate test of significance was then applied to determine whether the difference between the scores of both groups was statistically significant and was greater than might have occurred by chance.

The data collected and treated were: (1) the total number of children receiving no nominations on the Georgia Sachs Adams' sociometric survey in both the control and experimental groups, (2) the total number of children with one or fewer social nominations on the Georgia Sachs Adams' sociometric survey in both the control and experimental groups, and (3) the mean of the scores on the Georgia Sachs Adams' sociometric survey for the children falling below the twenty-fourth percentile of both the experimental and control groups.

Six hundred eleven children from twenty-two classes were selected

and assigned to a Randomized Control-group Posttest-only Design. Both
the experimental and control groups received posttesting. The number
of children in each of the groups, both experimental and control is
presented below in Table 3.

Table 3

The Number of Students in the Experimental and Control
Groups According to the Number Enrolled in Classes
and the Number Present During Posttesting

Group	Number of Students Enrolled in Classes	Number of Students Present during Posttest
Experimental	321	305
Control	313	306
Total	634	611

TESTING THE HYPOTHESES

Hypothesis 1. Classes organized upon the principles
and procedures of Poirier's team learning will not have
significantly fewer social isolates in them as a result
of team learning as measured by sociometrics than classes
not using Poirier's team learning.

The chi-square was used to test the effect of Poirier's team
learning on the rejection of social isolates by their peers within the
classroom. Posttest scores of children receiving no nominations from
their peers on the Georgia Sachs Adams' sociometric survey from both the
experimental and control classes were used to determine if the difference
between the total number of social isolates in each group was statis-
tically significant. Upon completion of the computations, no significant

difference at the .05 level was found to exist between the number of isolates in the experimental group and the number of isolates in the control group.

Since data in Table 4 show a chi-square value less than 3.84 the null hypothesis can be accepted as tenable. The classes in the study using Poirier's team learning did not have significantly fewer isolates in them than those classes in the study not using Poirier's team learning. Although not statistically significant in this sample, the team learning classes actually had more isolates in them than did the control classes. Sixteen social isolates were identified in the Poirier team learning classes while seven were identified in the control classes.

Table 4

Number of Social Isolates and Non-Isolates Observed
in Experimental and Control Groups in the Study

Groups	Social Isolates	Non-Isolates	Row Marginal
Experimental Group	16	305	321
Control Group	7	306	313
Total	23	611	634

X^2 = 2.681 (non-significant)

With 2 df, a X^2 of 3.84 is needed, to be significant at the .05 level.

Hypothesis 2. Classes organized upon the principles and procedures of Poirier's team learning will not have significantly fewer isolates and highly rejected fringe isolates in them as a result of team learning as measured by sociometrics than classes not using Poirier's team learning.

The chi-square was also used to test the effect of Poirier's team learning on the rejection of social isolates and highly rejected fringe social isolates by their peers within the classroom. Posttest scores of children receiving nominations of one on the Georgia Sachs Adams' sociometric survey were combined with those of the children identified as isolates in both the experimental and control groups. These scores were compared to determine if the difference between the total number of isolates and highly rejected social isolates in each group was significantly different from one another. Upon completion of the computations, no significant difference at the .05 level was found to exist between the children in the experimental group and those in the control group.

Since data in Table 5 show a chi-square value which is less than 3.84, the null hypothesis can be accepted. The classes in the study using Poirier's team learning did not have significantly fewer isolates and highly rejected fringe isolates in them than did the classes in the study not using Poirier's team learning. On the contrary, although not statistically significant, the classes in this sample using Poirier's team learning had more isolates and highly rejected fringe isolates in them than did the control group classes. Sixteen social isolates and twenty-nine highly rejected social fringe isolated for a total of forty-five in combination were identified in the Poirier team learning classes. Seven social isolates and

twenty-one highly rejected social fringe isolates for a total of twenty-eight in combination were identified in the control classes.

Table 5

Number of Social Isolates and Highly Rejected
Fringe Isolates Combined in Experimental
and Control Groups in the Study

Groups	Social Isolates and Highly Rejected Fringe Isolates	Non-Isolates	Row Marginal
Experimental Group	45	276	321
Control Group	28	285	313
Total	73	561	634

X^2 = 3.52 (non-significant)

With 2 df, a X^2 of 3.84 is needed, to be significant at the .05 level.

Hypothesis 3. Fringe social isolates in classes organized upon the principles and procedures of Poirier's team learning will not be significantly less intensely rejected as a result of team learning as measured by sociometrics than fringe social isolates in classes not using Poirier's team learning.

The anlysis of variance was used to test the effect of Poirier's team learning on the intensity of rejection of the fringe social isolate by his peers within the classroom. Posttest results of children receiving scores below the twenty-fourth percentile on the Georgia Sachs Adams' sociometric survey from both the experimental and control classes were used to determine if the difference between the

mean of the scores for each group was statistically significant. Upon completion of the computations, a significant difference was found to exist between the mean of the scores of the fringe isolates in the experimental group and the mean of the scores of the fringe isolates of the control group. However, this difference was the direct antithesis of that anticipated by the researcher.

Since statistically higher social acceptance scores were recorded for the children in the control group than for the children in the classes using Poirier's team learning, the above null hypothesis can be accepted. Table 6 shows an F value of 4.002 and a critical region equal to all values equal to or greater than 3.930. However, since the control group scores were significantly higher than the experimental group scores, not only must the alternative hypothesis 3 described in Chapter 1 be rejected, the converse of that hypothesis should be accepted: Classes in the study using Poirier's team learning will have fringe isolates with significantly lower social acceptance scores than classes not using Poirier's team learning.

SUMMARY

The fourth chapter of this report presented the data of the study which had been subjected to either the chi-square or analysis of variance. Posttest data on the following were reviewed: (1) the total number of children receiving no nominations on the Georgia Sachs Adams' sociometric survey in both the control and experimental groups, (2) the total number of children with nominations of one or fewer on the Georgia Sachs Adams' sociometric survey in both the control and experimental groups, and (3) the mean of the scores on the Georgia Sachs Adams'

sociometric survey for the children falling below the twenty-fourth
percentile in both the experimental and control groups.

Table 6

Analysis of Variance Results for the Mean of the Scores
of the Fringe Isolates in the Control and
Experimental Classes in the Study

Source of Variation	Sum Squares	Degrees of Freedom	Variance Estimate	F Value
Between Groups	3.7	1	3.7	4.002
Within Groups	109.100	118	.925	
Total	112.700	119		

F = 4.002 (significant but direct antithesis of that
           anticipated by the researcher)

With 119 df, a F of 3.930 is needed, to be significant
at the .05 level.

The .05 level of statistical significance was required for the
rejection of three null hypotheses. The first null hypothesis pertain-
ing to the total number of isolates in both the control and experimental
groups was accepted. No significant difference was found between the
two groups at the .05 level. However, there were more than twice as
many isolates in the team learning group than in the control group.

The second null hypothesis pertaining to the total number of
isolates and highly rejected fringe isolates in both the control and
experimental groups was accepted. There was no significant difference
at the .05 level between the isolates and highly rejected fringe

isolates of the control group and those of the experimental group. Again, although not statistically significant, there were more isolates and highly rejected fringe isolates in the Poirier team learning classes than in the control classes. This difference approached but did not reach the level of significance.

The third null hypothesis pertaining to the mean of the scores of the fringe isolates in both the control and experimental groups was accepted. Classes organized upon the principles and procedures of Poirier's team learning did not have significantly fewer fringe isolates in them. On the contrary, it was discovered that the Poirier team learning classes in the study had significantly more fringe isolates in them.

A summary of the study, conclusions, and recommendations for further research will be presented in Chapter 5.

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

This experimental study utilized Poirier's team learning within eleven selected third, fourth and fifth grade experimental classes in an effort to reduce the number of social isolates and highly rejected social fringe isolates in those classrooms. It was also utilized in an effort to reduce the degree of social isolation of those children identified as fringe isolates.

In this chapter, the investigator presents: (1) a summary of the study, (2) conclusions relating to the hypotheses, (3) implications of the study, and (4) recommendations for further research.

SUMMARY OF THE STUDY

A brief summary of the study includes the following: (1) the setting and selection of participants, (2) the procedure, and (3) analysis of that data.

The Setting and Selection
of Participants

The setting for the study of Poirier's team learning and social isolation was in six school districts within a one hundred mile radius of the San Francisco Bay. Nine schools were randomly selected in these school districts from a possible fifty-four. Four of the schools were

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in suburban communities with average 1970 family incomes well above
$18,000. Three of the schools were in small towns in large farm areas.
The neighborhood within which two of the schools were located had aver-
age 1970 family incomes of $11,000. The neighborhood of the third
school had families with a 1970 average income of $16,866. The last
two schools in the study were located in an economically poorer commu-
nity adjacent to a large city. The average 1970 income of the families
in this area was $7,004.

The Procedure of the Study

Six hundred thirty-four subjects, 321 experimental and 313
control, participated in the study. Eleven randomly selected control
classes and eleven randomly selected experimental classes were assigned
to a Randomized Control-Group Posttest-only Design. Both the experi-
mental and control groups received posttesting. No pretesting was
given.

The children in the experimental groups spent approximately
six months in classes organized upon the principles and procedures of
Poirier's team learning. They were placed in learning teams of five or
six children each. Each team worked together on many but not all school
assignments. The children in each team were instructed to help one
another whenever possible. Each team had a teacher-appointed team
leader whose responsibility it was to facilitate team cooperation.

Each child received individual grades for his own part in the
assignment. Each group received team points for their collective effort.
Rewards were often given for the team performing best. The class as a
whole often voted on which team they felt had performed best. Rewards

were given for achievement in non-academic areas such as for teacher-approved classroom behavior and consideration of others as well as for achievement in academic areas. Rewards tended to be small and frequent. Such rewards as being allowed to select the physical education game for the day or being allowed to go to lunch first were common. Occasionally, larger rewards such as a special field trip were given. It was assumed that this tended to stimulate competition between teams and appeared to establish greater team esprit de corps.

Analysis of the Data

The investigator used the Georgia Sachs Adams' sociometric survey to identify the social isolates, highly rejected fringe social isolates and fringe social isolates in each class. Following the post-testing, the data related to the number of social isolates and the number of isolates and highly rejected fringe social isolated was subjected to the chi-square statistical analysis. The data related to the degree of social isolation of the children identified as fringe social isolates was subjected to an analysis of variance.

CONCLUSIONS RELATING TO THE HYPOTHESES

The objective of this study was to investigate the effect of Poirier's team learning upon social isolation and social fringe isolation of children within classes organized upon the principles and procedures of Poirier's team learning.

Hypothesis Relating to
Social Isolation

The findings of this study rejected the hypothesis that classes

organized upon the principles and procedures of Poirier's team learning
would have significantly fewer social isolates in them. The posttest
scores of children in the Poirier team learning classes did not indicate
fewer isolates. On the contrary, although not statistically significant,
the team learning classes actually had more isolates in them than did
the control classes. Sixteen social isolates were identified in the
Poirier team learning classes, while seven were identified in the
control classes.

Hypothesis Relating to Isolates
and Highly Rejected Fringe Isolates

The findings of this study also rejected the hypothesis that
classes organized upon the prinicples and procedures of Poirier's team
learning would have significantly fewer isolates and highly rejected
social fringe isolates combined. The posttest scores of the children
in Poirier team learning classes did not indicate fewer isolates and
highly rejected social fringe isolates. Again, the contrary was true.
The classes using Poirier's team learning had more isolates and highly
rejected fringe isolates in them than did the control group classes.
Sixteen social isolates and twenty-nine highly rejected social fringe
isolates for a total of forty-five in combination were identified in
the Poirier team learning classes. Seven social isolates and twenty-
one highly rejected social fringe isolates for a total of twenty-eight
in combination were identified in the control classes. This difference
approached but did not reach the .05 level of significance.

Hypothesis Relating to
Fringe Isolates

The findings of this study rejected the hypothesis that classes

organized upon the principles and procedures of Poirier's team learning would have fringe isolates with significantly higher social acceptance scores than those children in classes not using Poirier's team learning. In fact, the converse of that hypothesis was true. Children identified as fringe isolates in the Poirier team learning classes had significantly lower social acceptance scores than those in the control classes. This of course, was the direct antithesis of the assumptions of this study.

IMPLICATIONS OF THE STUDY

Bearing in mind the limitations of the study, it would appear that Poirier's team learning increased, rather than decreased, the degree of social isolation of fringe isolates in this study. The difference between the mean of the scores of the children in the Poirier team learning classes and that of the scores of the children in the control classes was significant at the .05 level.

Although not statistically significant, the actual number of isolates in the Poirier team learning classes was more than double that of the control classes. Too, when the scores of the isolates and the highly rejected fringe isolates are combined, the resulting difference in the total number of children between the experimental and control group approached significance at the .05 level. Here again, there were more socially rejected students in the Poirier team learning classes than in the control classes.

The investigator views these results with surprise. Although the literature and expert opinion did not reach consensus, there was general agreement that greater understanding of and respect for others would increase when children had an opportunity to work together toward

common goals. This appeared especially so if the children's cooperative efforts were for extended periods of time and were frequent. It is surprising therefore, to find children in classes using Poirier's team learning having significantly lower social acceptance scores than children in classes not using team learning.

When examining the elements of Poirier's team learning in a search for possible causes of decreased social acceptance scores, three possibilities come to mind. First, Poirier's team learning stresses inter-team competition. Perhaps the constructive value of children working together toward a goal was not as powerful an influence on the team members as the possible resentment toward academically or socially weak children when the team did not achieve its goal. That is, in the heat of competition, the weaknesses and shortcomings of the socially less accepted children may have caused more rejection than it was possible for the new familiarity to cause compassion and understanding.

Second, Poirier suggests that children of equal academic, creative and social capabilities be equally distributed throughout the teams in an effort to balance them. Thus, socially less accepted children are placed in different teams. Rarely are sociometric surveys given to the class before the team's composition is determined. Since no effort is generally made by teachers to place low status children with those few who have chosen them, teacher-constructed work teams such as those in Poirier's team learning might actually decrease the chance of a fringe isolate working with a potential friend. This problem might be overcome by requiring that all classes be given a sociometric survey before team learning was instituted and by placing fringe isolates in teams with those students who mentioned them on the sociometric survey.

Third, it is possible that the characteristics of the socially less accepted child are such that closer relations with members of the class only act to reaffirm their dislike or disapproval of them.

In addition to examining the elements of team learning for possible causes of decreased social acceptance scores, it is also important to examine the procedures used in this study to determine if they, rather than the treatment, could have affected the results. Although the study was conducted in accordance with the research procedures outlined by Van Dalen and Meyer (1966) which included meticulous randomization, it is possible that procedural factors could have influenced the results in a way not truly reflective of the actual social dynamics of the experimental classes.

Three such procedural factors come to mind. First, although randomization techniques permit a researcher to declare that at the time of assignment the groups were equal, it is possible, through the laws of chance, that they were not. As Van Dalen and Meyer have stated:

> While seemingly strange, the best method of attaining experimental equivalency is through the use of simple randomization techniques. . . . Randomization procedures do not remove extraneous variables, such as IQ or age, which may affect the dependent variable, nor do they control their presence. These extraneous variables still affect the inquiry, but the laws of chance rather than the personal bias of the E now operate.

Second, it is possible that a longer period of time was needed under the Poirier team learning organization to effect a positive change in the sociometric standing of the isolates and fringe isolates in the study. It may have been that six months was not a sufficient amount of time for the socially less popular children to establish new friendships. However, since Poirier recommends that membership in learning teams be

changed every six to eight weeks, the Poirier team learning system itself may have been a constraint.

Third, the Georgia Sach Adams' sociometric survey measures only the relative social standing of each child in the class. It does not measure social growth or the increased social acceptance of those identified as isolates. It is possible that most of the children in the class including the isolates grew in social skill because of their experiences in team learning and were socially more accepted. However, since social growth was general throughout the class, the isolate continued to be one of the least popular children even though he too had increased his social acceptability. Such an hypothesis would suggest that the isolated growth only matched that of the other children in the class. His relative position in the social hierarchy remained unchanged.

However, assuming such a theory is meritorious, it still would not explain the significantly lower social acceptance scores of the fringe isolates in the Poirier classes since their scores were free to vary and would have reflected greater social acceptance.

Last, it should be noted that although the data indicated a clear trend toward lower social acceptance scores for children in team learning classes, team learning was extremely popular with the teachers and children in the study. No teacher noted any outward sign of increased rejection of less socially accepted children. On the contrary, most teachers commented on how much better the children got along and how well they worked together and helped one another.

RECOMMENDATIONS FOR FURTHER STUDY

The findings at the conclusion of the study reaffirm Bonney's (1971) conclusion that, "School personnel are warned against assuming that most socially low pupils can be aided by socializing experiences." This study adds to the information already gathered by Barcley and Jackson (1966), Ashmore (1962), Durrell (1961), Amidon and Hoffman (1963) and Poirier (1970). Since the results of this study contradict certain aspects of their studies and theories, still further research is indicated.
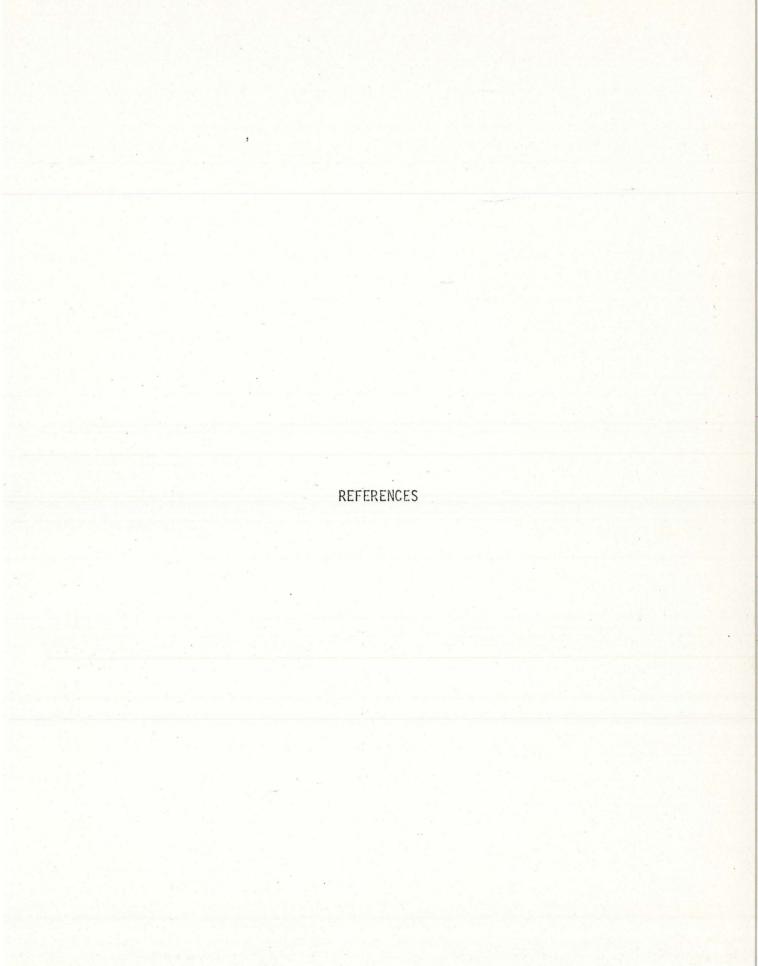
The investigator recommends that study be made in the following areas:

1. Researchers should experiment to ascertain the effect of competition on social isolates and social fringe isolates.

2. Researchers should experiment to ascertain what changes, if any, occur in social acceptance within a learning team from the time it is organized to its deactivation. Do less socially accepted children become more or less popular with their teammates as time passes?

3. Researchers should experiment to ascertain what effect placing less socially accepted children with those who have nominated them on a sociometric survey will have on social status.

4. Since this study's review of the literature revealed model-reinforcement group counseling as a potential aid in reducing the number of social isolates and the degree of isolation of fringe social isolates, researchers should experiment to ascertain what effect on social status model-reinforcement group counseling would have.

SUMMARY

The investigator summarized the experimental study in Poirier's

team learning and social isolation and fringe isolation and reviewed its findings. The findings of the study indicated that Poirier's team learning did not reduce the number of isolates, the number of isolates and highly rejected fringe isolates or the degree of social isolation of fringe isolates in the study. On the contrary, it significantly increased the degree of social isolation of the fringe isolates in the study.

Although Poirier's team learning was quite popular with the teachers and students in the study, school personnel are cautioned against the use of team learning with low social status children. Although the teachers in the study felt that the children in their classes cooperated and helped one another more than they had before the institution of team learning, the increased social rejection went unnoticed.

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