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ABSTRACT

This pilot study investigates the socializing effect of school environments, specifically with respect to helping and sharing in children. Environmental conditions presumed to promote the development of helping and sharing in children are: (1) interdependent goals, (2) modeling, (3) reward of helping and sharing, (4) awareness of others' feelings, and (5) use of control or power. The Teacher Observation Scale was developed, based on 4 months' observation of 4th-grade classrooms and was tested for inter-observer reliability in 96 observation sessions. Two classrooms were selected and an extreme groups approach was used. Class A was designated as cognitively oriented; Class B, socially oriented (based on the principal's judgment of teacher behavior and classroom structure, and teachers' descriptions of their goals. Teacher A was expected tc encourage helping behavior; Teacher B was expected to be less likely to do so. The Learning Environment Inventory for Young Children was administered to determine students' environmental perceptions. It was predicted that Class A students would show more altruistic behavior than Class B students. The Observation Scale, applied to both classes, varied in the predicted direction on teacher dimensions. Analyses of children's perceptions and behavior provided preliminary positive results. A discussion of the pros and cons of using a naturalistic/observational approach to study children's altruistic behavior is presented. (DP)

Helping and Sharing Behavior in Cooperative and Competitive Classrooms[1]

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In recent years educational critics such as Dreeben (1968), Henry (1963), and Holt (1964) have voiced concern about the interpersonal aspects of schooling. While each of these authors has had a variety of things to say, they have all mentioned what they describe as the highly competitive environment of schools.

At the same time developmental psychologists, including Bronfenbrenner (1970), Hartup (1970), and Minuchin, Biber, Shapiro and Zimiles (1969) have suggested that researchers should consider not just the possible socializing effect of families but also the socializing influence of institutions or groups. This would appear to be a reasonable suggestion given the small degree of relationship documented between parental practices and child behavior (Hoffman and Saltzstein, 1967; Sears, Maccoby and Levin, 1957; Sears, Rau and Alpert, 1965). Another reason for examining the socializing effect of institutions and groups is the apparent trend toward more day-care centers, nursery schools and working mothers--all of which would take children away from their parents earlier and longer. In this context Bronfenbrenner (1970) has argued that the family can no longer be considered the primary socialization unit because a changing culture has conspired to decrease the amount of time parents and children spend together and what they have in common when they are together.

All of this is preface to saying that we have undertaken an investigation of the socializing effect of school environments, specifically with respect to helping and sharing in children; that this is a naturalistic investigation; and that it is still in its pilot stages.

Our work on the relationship between school environments and helping and

sharing in children has progressed through a number of phases. We began with a review of the research literature in order to conceptualize the conditions presumed conducive to the development of helping and sharing in children. We then observed in classrooms in order to translate our conceptual model into behavior categories that could be feasibly and reliably observed, thus yielding a teacher observation scale. Finally, we undertook a pilot study of two classrooms that the school principal and teachers themselves judged as pursuing different goals (the degree to which they emphasized social development, for example) and employing different techniques. Our hope was that we would be able to distinguish these classrooms using our observation scale categories, and that we would also observe differences in child perceptions and behavior congruent with the theoretical influences of classroom differences. It should be very clear that we are in no way suggesting that this pilot work provides evidence of a causal link between classroom environments and child behavior. Furthermore, we are aware that this extreme groups approach is a weak test of the differential effects of a large number of variables operating in classrooms, but positive findings at this stage seemed essential to justify the greater expense and time involved in future large scale, natualistic studies. In addition, this pilot study was viewed as useful for making final observation scale revisions, for determining exact criteria for selection of classrooms in a large scale study, for uncovering unanticipated design or analysis problems, and for suggesting future research ideas.

Developmental antecedents of cooperation and altruism.

We will discuss five general categories that characterize conditions conducive to the development of helping and sharing in children. These categories were derived from the theoretical formulations of cooperation and

altruism developed by Deutsch (1949) and Aronfreed (1968) and from the findings of available empirical research. These conditions, presumed to be conducive to the development of helping and sharing in children, include: a) interdependent goals, b) modeling of helping and sharing, c) reward of helping and sharing, d) awareness of the feelings of others, and e) use of control or power.

First, according to Deutsch (1949) and Stendler, Damrin and Haines (1951), helping and sharing occur when individuals are put in situations where their goals are interdependent, where helping another directly benefits oneself. Such a situation exists in a classroom when children are evaluated or graded, not as individuals but as a group. Closely related to interdependent goals is whether evaluations for individual work are made by comparing one child's achievement with that of another. Such comparisons make it clear that one's own successes occur at least in part as a function of outdoing someone else and one's failures occur because someone else is better or faster. It seems reasonable, therefore, that direct comparisons would discourage helping and sharing.

Second, from Bandura, Ross and Ross (1961) as well as from Aronfreed's (1968) formulation, one would predict that observation of a model who is helping and sharing would increase the amount of overall helping and sharing within the classroom. Thus, a teacher who is herself helpful should serve as a model for the children with whom she works. Current research indicates that children who observe adults engaging in helping and sharing behaviors are most likely to engage in those behaviors themselves (Rosenhan and White, 1967; Staub, 1971). Modeling "helping" in the classroom may mean to help solve a problem, to fully solve a problem, to lend emotional support to an individual, and/or to promise help and attention in the future when unable to give immediate assistance to a pupil. Refusing to help would be an example of modeling behavior which is

hypothesized to inhibit helping and sharing.

Third, we would expect that contingent reward would increase helping and sharing (Dolan and Adelberg, 1967). Consequently, a teacher who provides approbation for helping and sharing should find herself surrounded by a group of children who help and share, perhaps initially to gain the teacher's attention and goodwill. However, it is reasonable to think that engaging in activity that gives pleasure to another may be self-perpetuating. In the first place, it allows the giver to experience pleasure as a consequence of helping another person, and secondly, it provides a helping model to the person who is helped which should promote his engaging in similar behavior in the future.

Fourth, on the basis of Aronfreed's (1968) theory one would predict that any variable which facilitates the child's ability to convey his own feelings and interpret the feelings of others will also facilitate helping and sharing. The research by Johnson (1971), Kinney (1953) and Wichman (1970) suggests that direct personal contact and accurate interpersonal understanding enhance subsequent cooperation. In the classroom one would thus expect that face-to-face contact between students (encouraged by seating arrangements and the rules of social interaction in the classroom) would facilitate helping and sharing by creating conditions where people are better able to receive and accurately understand the cues that convey how others feel. Even more important would be the degree to which feelings are elicited, expressed, and talked about in the classroom. From these considerations, one would predict that the teacher who asks how others feel, asks if someone needs help, and sets limits by elucidating social consequences for her rules would facilitate awareness of feelings and needs of persons in the classroom environment. Such conditions would thus increase the probability of the children perceiving where help is needed and

consequently increase the frequency of helping behavior.

Fifth, the use of control or power in the classroom may also be important for the development of helping and sharing behavior. Verbalizing values for or against helping and sharing is one way a teacher uses his or her power to encourage or discourage helping and sharing in others--although frequently these values are conveyed indirectly by what behavior the teacher allows or models, rewards or punishes.

Perhaps a more significant way in which the use of power or control may influence helping and sharing among pupils has to do with the degree to which pupils have control. In an environment where children have control they have more opportunity and adult sanction to give and receive help from each other.

Teacher Observation Scale Development

The scale described in Appendix I was developed after four months of observation in several fourth grade classrooms. Appendix II defines the specific behavior categories that represent the five major determinants of cooperation and altruism discussed in our conceptual model. Not all of the behavior categories on the Teacher Observation Scale relate directly to our hypotheses. Some of the behavior categories were included (e.g., 6e. *Enforces limit* - offer of reward; 6c. *Enforces limit* - personal consequence) to help the observers distinguish related categories which were of interest (e.g., *Sets limit* - social consequences). The additional categories helped to clarify what limit setting by social consequences was. This was useful in developing the scale but probably has limited value for future use in studies not related to scale development. Ninety-six paired 7½-minute observations were collected to provide inter-observer reliability data. Since an observer would observe for 15 seconds and then record for 15 seconds, each 7½-minute time period included 15 observations.

Inter-observer reliability was based on the Pearson Product-moment correlation coefficient and mean percentage agreement. Table 1 presents the reliability determined by these two procedures.

Insert Table 1 about here

The following five categories were not observed during our time sampling: 1e. Asks Questions - for help-solution; 5a. Verbalizes Values - pro helping, sharing; 7a. Praises for helping, sharing; and 8d. Punishes - tells child to punish. We need to collect some reliability data on them during future observations or eliminate them from the Teacher Observation Scale if they occur too infrequently.

Because of the large number of zero pairs (instances when neither observer checked the behavior) for some categories the mean percentage agreement is undoubtedly too high an estimate and the Pearson r too low an estimate of inter-observer reliability. In sum, we were encouraged by the obtained reliability data and undertook a pilot study, using the Teacher Observation Scale in two classrooms.

The Pilot Study

Sample and Procedure

Two fourth grade classrooms were selected using two criteria: 1) the school principal's judgment of characteristic teacher behavior and classroom structure as it might relate to general social development in children as opposed to cognitive development, and 2) teachers' descriptions of classroom goals.

It should be noted that of the two teachers, Teacher A was male and Teacher

B was female. However, the female's class was judged as less oriented toward interpersonal goals and less likely to use techniques which would encourage these goals. Thus, any sex difference in modeling behavior should not operate in the direction of confounding our hypotheses, e.g., it could not be argued that boys always associate men with competition and therefore are more competitive when the teacher is male. The effect of modeling teacher behavior, however, may vary according to sex of child and the sex of the teacher.

In terms of child characteristics the distribution of the sexes in the two classrooms studied was comparable. Nor did classroom composition differ significantly on standardized group IQ or achievement measures. Each classroom was observed by the two authors for a total of 20 hours with observations obtained on Mondays, Tuesdays, Thursdays, and Fridays both in the morning and afternoon.

Teacher Behavior

Frequency data and Chi-squares are presented in Table II indicating the differences in the way the two teachers structure classroom activities and interact with their students.

Insert Table 2 about here

The major finding revealed in Table 2 is that classrooms did vary in the predicted direction on the teacher dimensions considered important for socialization of helping and sharing. Teacher A was selected as more likely to encourage helping, sharing behavior, Teacher B less likely to do so.

In line with our predictions it is clear from Table 2 that Classroom A is characterized by more behaviors in four of the five conditions that facilitate helping and sharing and fewer behaviors in all five conditions that impede

helping and sharing than in Classroom B. In Classroom A there are more group goals there is more modeling of helping--under gives help and promising help; there are more behaviors thought to encourage awareness of the needs and feelings of others, e.g., opportunity to talk with others and asking if children need help; and if you turn to Table 3, the teacher in Classroom A also appears to use his power in such a way as to encourage helping and sharing. He verbalizes in favor of helping and sharing and turns over authority considerably more frequently than the teacher in Classroom B.

In addition, some categories had very low frequencies of occurrence (see Table 3) including a number thought to be important in differentiating classrooms (e.g., Praises for helping, sharing; Punishes for helping, sharing). In some cases the frequencies were sufficiently low to make any between class comparisons meaningless. Experimental manipulation of the variables with low base rates would be necessary to further suggest whether such variables could differentiate classrooms and predict child behavior.

Insert Table 3 about here

Child Perception

To determine how the children in the two classrooms perceived their classroom environments Anderson's (1971) Learning Environment Inventory for Young Children ("My Class Inventory") was administered. The "My Class Inventory" yields scores on five scales: Satisfaction, Friction, Competitiveness, Difficulty and Cohesiveness. Of the five, the scale measuring perceived competitiveness was of greatest interest to us because so many of our hypotheses derived from

theories of cooperation and competition.

Insert Table 4 about here

As you can see from Table 4, Classrooms A and B differ significantly on only two environmental climate variables, perceived Competitiveness and perceived Difficulty. This difference in children's perceptions is consistent with the observed differences in classroom structure and teacher behavior on the Teacher Observation Scale.

Child Behavior

The final step in this pilot study was to collect data on the children in the three classrooms. In addition to perceiving their classroom environments as different, we wanted to know if the children behaved differently with respect to a variety of helping and sharing measures.

Clearly, what we would like to establish is that there is a causal relationship between how teachers behave and structure their classrooms, and the development of interpersonal skills of helping and sharing exhibited by their students. The data we are presenting today in no way allows us to do this. By the time the school district gave final approval, the children had been in classes for a month. Consequently, we have no knowledge of the children's level of sharing and helping skills when they first entered the classrooms.

However, we felt it would still be useful in planning further research to try documenting differences in child behavior across classrooms. Based on differences obtained from the Teacher Observation Scale and child perception data, we predicted that children from Classroom A would show more helping and sharing behavior than children in Classroom B. If we did not find differences

in child behavior we would have to either conclude a) that a larger study employing many classrooms would be unjustified or b) our measures of child behavior were insensitive to differences. On the other hand, obtained differences in child behavior across classrooms would at least justify further naturalistic research.

Task Description

Since this pilot research was initially described as a naturalistic study, we need to discuss our reasons for shifting to contrived incidents as opposed to observing children directly in the classroom.

The main reason for using contrived incidents was that initial piloting of a child observation scale indicated low frequencies on many relevant behaviors, suggesting that we would have to spend weeks in each classroom to collect baseline data on reliability.

Another reason for using contrived incidents was the possibility that compared to children in classrooms oriented toward enhancing helping and sharing skills, those in classrooms structured so as to discourage helping and sharing (e.g., little opportunity for interaction) might in fact be equal in cooperative skills and willingness to employ these skills for someone else's benefit. In other words, children in all classrooms might be equally willing or skillful in helping or sharing, but are simply not allowed to exhibit their skills and eagerness for such activities.

The disadvantage of using contrived incidents without comparison data gathered in a natural setting is that we do not know how situation specific the effect of a particular environment is. On the one hand, we would not expect children from an environment which encourages cooperation to continue to behave cooperatively in a highly competitive environment--it would not be adaptive. On the other hand, there is reason to believe that immediately

prior experiences with cooperation or competition affect willingness to cooperate or compete in a neutral situation (Kagan & Madsen, 1971). Whether the overall classroom environment can be equated with such an experimental manipulation is still another question.

At any rate, our procedure was: to construct situations--where either helping/not helping; sharing/or not sharing would be possible. Children from all classrooms would be exposed to the same situation and this would provide a clear basis of comparison.[2]

Task I

Our first task we borrowed directly from Madsen (1971), a marble-pull game. Pairs of children faced each other across a table. Each held a string attached to a wooden marble holder that would move in either direction on a wooden board depending on which string was pulled. The object of the game was to slide the wooden holder so that the marble would drop into a hole at either end of the board. In order to get the marble into a hole one child had to relax his string while the other pulled. If both children pulled at the same time, the marble holder would separate and neither child could pull the marble to his hole.

Differing from Madsen's (1971) instructions, the children were told that they would win two prizes for each marble they got in their hole. In addition, since the purpose of this study was to determine if the pairs would cooperate if they understood what a cooperative strategy entailed, the procedure involved in getting a marble into a hole was carefully described before the children attempted the game. What would happen when both children pulled together was also described. Then the children were asked to predict what would happen when one pulled and when both pulled. Finally, the children were given permission to talk as they played the game. Each pair had 8 trials in which to maneuver the marble into one or the other hole. This task was administered by our research assistant.

In order to determine whether there were differences between classrooms in the children's cooperative behavior, Fisher's Exact Probability Test was run on the number of children who helped his partner win at least one trial. If the child never let his partner win a trial, he was put in the non-cooperating category. If, on the other hand, he let his partner win at least once he was placed in the cooperating category. A child might not let his partner win a second time if the partner would not cooperate at least once. Our criteria was assumed not to be dependent on the willingness of the child's partner to also cooperate since letting one's partner win just once put one in the cooperating category. As Table 5 indicates, there was a slight trend ($p < .12$) for there to be more non-cooperators in Classroom B than in Classroom A. Again, children in Classroom A perceived their classroom as less competitive than children in Classroom B. Likewise, the teacher observation scale indicated that Classroom A exhibited more of those characteristics thought to be conducive to helping and sharing.

We also analyzed the marble-pull task by pairs to see how many trials the pair won in total. Although Classroom A children appeared more cooperative (mean # of trials won = 5.25, s.d. = 3.08) than Classroom B children (mean # of trials won = 4.38; s.d. = 3.37), the statistical analysis indicated that the differences were negligible ($t = .93$; d.f. = 48).

Task II

Our second task, similar to one used by Staub (1970) and again administered by our research assistant, required triads of children to draw a picture of the "way they would like to have their classroom arranged next year." Each threesome was provided with one felt pen and one large piece of paper. Then they were given ten minutes in which to draw. The question here was whether the children would work together taking turns using the pen--whether they would share. Our

prediction that children from the two classrooms would differ in sharing was based on the assumption that a classroom which encouraged the development of helping and sharing would yield students more likely to share in other situations.

The specific measure of turn-taking employed was the deviation score of each member of a triad from 3.33 minutes, squared to get rid of negative numbers, and summed for each triad. Differences in squared deviations by triad are consistent with differences in classroom structure and teacher behavior and with children's perceptions of classrooms (Classroom A - $\bar{x}$ = 6.18, s.d. = 7.41; Classroom B - $\bar{x}$ = 18.97, s.d.= 24.58). However, a Mann-Whitney U test revealed no significant differences between the groups with respect to how equally they divided their alloted time (U = 23; n_1 = 8; n_2 = 8; $p < .19$).

Task III

The third task given to the children had two parts. In the first part of the task I asked the children to choose a drawing assignment for someone in their class to do. They could choose an easy task (and circle a low number on a 1-7 continuum) for this anonymous other or a difficult task (by circling a high number on a 1-7 continuum). The children were also told that regardless of the difficulty of the assignment the person who got the assignment could win just one prize if he did a good job. It was pointed out that it is harder to do a good job on a difficult assignment. Therefore, if they wanted to make it difficult for a classmate to win a prize they would give him a difficult assignment, if they wanted to make it easy they would give him an easy assignment. We found no significant differences between classrooms in average difficulty level of the assignment given to others (Classroom A: $\bar{x}$ = 3.18, s.d. = 1.25; Classroom B: $\bar{x}$ = 3.33, s.d. = 1.99; d.f. 44, t = .30).

There are, of course, several ways of viewing this absence of findings. It may be that no causal relationship is operating between the classroom variables and the child behavior. Another possibility, however, is that the directions for the task were too complex, or that the stipulation that a person could win only one prize regardless of task difficulty carried little weight given real world experiences which invariably suggest a relationship between the difficulty of the task and the size of the reward. Thus, some may have neglected to give a difficult task precisely because they thought it would allow a classmate to win more prizes.

In the second half of this task the children were shown a picture drawn by "another 4th grader." They were told this person could win from 1 to 7 prizes depending on how good they thought the picture was. Then they were told to circle a low number (on a 1-7 continuum) if they thought the drawing was not very good or a high number if they thought it was a very good drawing. Using a t-test for analysis we found, as Table 6 indicates, that the children in Classroom A gave significantly more prizes for the drawing than did the children in Classroom B.

Insert Table 6 about here

Summary

In summary, we found that Classroom A was characterized by more behaviors assumed to facilitate helping and sharing and fewer behaviors that impede helping and sharing than in Classroom B. Of the four possible differences in child behavior that might have been observed between the two classrooms, two differentiated Classroom A from Classroom B at a statistically significant

level. On the remaining two tasks the children from the two classes did not differ significantly, although in each case Classroom A children were the most helping or sharing, consistent with every other comparison involving teacher behavior and classroom structure, child perceptions and child behavior.

Discussion

The major question we wanted to answer in doing this pilot study was whether a naturalistic/observational approach would be useful in the study of cooperation and altruism.

A naturalistic approach that is systematic (e.g., observe for a specified period of time and then record for a specified period of time; time sample in the mornings and afternoons and on the various week days) allows one to determine the frequency with which a given behavior or structure occurs--a guard against being overly impressed by an occurrence which is extremely rare--and by defining categories ahead of time, it allows one to establish inter-observer reliability--a guard against being unduly influenced by one's own preconceptions and idiosyncratic ideas. Furthermore, a naturalistic approach may be useful for documenting child behavior in specified environments such as classrooms, although there can be problems in distinguishing whether children have developed the inclination and/or skills to help and share in an environment where all but a very narrow range of behavior is suppressed.

However, if our goal is to create an environment which in fact encourages cooperative and altruistic behavior then a naturalistic approach has limited usefulness. Even with a large number of classrooms in our sample, it would be difficult to design a study which would allow the research to draw causal relationships between what is happening with respect to classroom structure/teacher behavior and the behavior of the children. In spite of this drawback we feel there are some real benefits to be gained from looking at the phenomenon of

interest in a naturalistic environment.

In the first place, if the ultimate goal is to change or alter classroom structures and teacher behavior, then at some point it is necessary to translate a theoretical conception of what factors should produce cooperative or altruistic behavior into specific behavior observations. Developing and establishing reliability on an observation scale demands that you do exactly this--and do it very explicitly. For example, we predicted that situations in which one child's success becomes the occasion for another child's failure should produce an unwillingness to help or share--competitive behavior. But then we had to establish what this behavior might look like in the classroom. Sometimes we found that the teacher did not even have to call on another child in order for the "your success/my failure" contingency to operate. For example, in one of the classrooms we observed the teacher would send two children to the board to do the same math problem--and the goal was to get the correct answer faster. When this happens the rest of the class was quick to acclaim a winner.

A second advantage of observation in a naturalistic environment is that a count of frequent or infrequent teacher/classroom behaviors provides information as to what variables need to be manipulated. Experimental-laboratory research can tell you whether rewarding helping or sharing will increase helping and sharing behavior--but if a teacher already does this then simply increasing the frequency of her behavior may not be crucial. As it turned out, however, the frequency of the teachers' rewards for helping and sharing was extremely low in both our classrooms, so we would suspect manipulating this variable might be very important in altering child behavior.

A third benefit, and one of the most important, to be reaped from a naturalistic study is that it suggests possible interactions that might not be observed in a more controlled experimental setting. For example, much of the research

with adults suggests the importance of certain structural variables in encouraging cooperative activity--for example, face to face contact or interdependent goals.

Our pilot work in a third classroom suggests that the classroom structure may be a facilitating variable with children who have not developed adequate skills in communicating needs and feelings, or in giving and receiving help. If the teacher does not help the children develop these skills, the children end up at each other's throats when they are given the opportunity for face to face contact.

At this stage in our research development, then, we feel the naturalistic approach has paid off in terms of the benefits just described. The question, however, is whether to move to small-scale experimental manipulations and then to classroom teacher training programs, or whether there is some advantage to pursuing a large-scale naturalistic study with many observers and many classrooms. Clearly, the benefits already described would be more fully realized in a large-scale study in which sex-differences of teachers were controlled, in which observer bias was reduced, and where a variety of possible teaching styles could be considered.

In addition, a large-scale naturalistic study may be important in persuading people of the importance of the school environment in a way that smaller, more carefully controlled studies never seem to be. Rosenthal's Pygmalion in the Classroom (1968) is a case in point. People have talked about teacher expectancy as an important variable in student achievement for years, yet it has only been since the book that teacher expectancy has been given much serious attention.

The sobering thought of doing a large scale naturalistic study is the cost involved. Locating observers, training them, finding classroom teachers that would allow observers to sit in their classrooms for a whole week, finding

classrooms with just one teacher without multi-age grouping, and coordinating the data coding and storage would be expensive both in terms of money and time.

We find ourselves at this time persuaded by our pilot data that classroom environments can be related to child behavior. We have gathered pilot data on a third classroom to keep us from being tied to and focused too narrowly on data from two extremely different classrooms. We are now planning experimental-laboratory research to investigate the possible impact of low base rate categories of teacher behavior (e.g., statement of values) and the interaction of certain variables (e.g., structural versus skill learning variables). The present pilot adventure into a naturalistic setting has served as a useful heuristic device.

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Footnotes

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2. Exact wording used with each child task can be obtained, upon request, from the authors.

Table 1
Inter-observer Reliability

BEHAVIOR CATEGORIES	r (n=96)	Mean Percentage of Ratio Agreement (n=96)
Academic setting		
Talking allowed	.87	76
Talking not allowed	.87	58
Goals		
Individual	.83	80
Group	.99	97
Mixed	.99	94
None	.71	61
Interaction		
Individual	.86	84
Group	.91	67
Whole class	.91	84
No one	.98	81
Specific Nature of Interaction		
1. Asks Questions		
a. feeling	.97	97
b. if needs help	.65	90
c. problem or idea	.95	94
d. for help - task	.63	91
e. for help - solution	xx*	xx*
2. Listens	.62	95
3. Turns over authority	.99	96
4. Participates		
a. as equal	.90	94
b. as leader	.70	95
5. Verbalizes Values		
a. pro helping, sharing	xx*	xx*
b. against helping, sharing	.70	96

Table 1 (continued)

	r	Mean Percentage of Ratio Agreement
6. Sets or enforces limit, command		
a. threat	.72	96
b. social consequences	.44	88
c. personal consequences	.44	93
d. statement; reminder; direction	.91	82
e. offer of reward	.49	87
7. Praises, encourages, rewards		
a. for helping, sharing, etc.	xx*	xx*
b. for academic, other	.77	84
c. tells child to praise	xx*	xx*
8 Punishes, discourages, criticizes		
a. for helping, sharing	xx*	xx*
b. for hurting, not listening	.70	100
c. other; academic	.85	87
d. tells child to punish	xx*	xx*
9. Gives help		
a. helps solve	.96	86
b. solves	.81	82
c. lends emotional support	.59	94
10. Help and Attention Withheld		
a. future help promised	.48	89
b. future help not promised	.59	85
Expresses Feelings		
1. Liking - positive; verbal	.81	97
2. Liking - positive; nonverbal	.70	93
3. Disliking - negative; verbal	.50	83
4. Disliking - negative; nonverbal	.75	76
Evaluation		
1. Explicit comparison	.81	95
2. Implicit comparison	.93	91
3. No comparison	.79	82

* Zero frequency during the 96 paired observations

Table 2
Chi-Squares based on Frequency Distribution for Observation Scale Categories*

	Behavior Category	Teacher A Did Occur	Teacher B Did Occur	X^2	p
A.	Academic Setting - talking allowed	1761	926	612.50	.001
B.	Goals - individual	1014	1539	226.79	.001
	- group	109	25	53.46	.001
C.	Interaction with Whom - individual	1079	1416	91.41	.001
	- small group	225	178	6.06	.025
D.	Asks Questions - feeling	14	23	1.70	---
	- if needs help	42	24	4.56	.05
	- for help-task	30	19	2.13	---
	Sets or Enforces Limit/Command -				
	- threat	9	23	5.23	.025
	- social consequences	22	13	1.89	---
	Praises - for academic; other	65	77	.81	---
	Punishes - for academic; other	30	136	68.14	.001
	Gives Help - helps solve	133	62	26.68	.001
	- solves	151	136	.82	---
	Help Withheld - future help promised	37	10	14.70	.001
	- future help not promised	24	21	.10	---
	Expresses Feelings - negative; nonverbal	20	43	7.64	.01
	Evaluation - implicit comparison	27	34	.56	---

* Based on a total possible occurrence of 2355 for Classroom A and 2370 for Classroom B.

Table 3
Low Base Rate Behavior Categories from Teacher Observation Scale*

	Teacher A	Teacher B
Asks Questions - problem or idea	8	1
- for help - solution	4	3
Praises - for helping and sharing	1	1
- tells child to praise	9	1
Punishes - for helping and sharing	1	0
- for hurting	2	1
- tells child to punish	0	0
Gives Help - lends emotional support	15	5
Expresses Feelings - positive; verbal	4	6
- positive; nonverbal	14	6
- negative; verbal	0	15
Evaluation - explicit comparison	2	12
Verbalizes Values - pro helping, sharing	6	2
- against helping, sharing	0	5
Turns over Authority**	137	1

* Based on total possible occurrence of 2355 for Classroom A and 2370 for Classroom B.

** Included in this table because of the low base rate obtained in Teacher B's classroom.

Table 4
Differences in Student Perceptions of Classroom Environments
(d.f. = 50)

Scales	Teacher A Mean	Teacher A SD	Teacher B Mean	Teacher B SD	t	p
Satisfaction	19.56	4.78	18.63	4.87	- .69	n.s.
Friction	23.16	3.91	23.37	3.84	.20	n.s.
Competitiveness	20.32	3.48	22.67	3.75	-2.17	.05
Difficulty	14.32	3.20	16.85	2.82	-5.50	.001
Cohesiveness	21.16	3.78	19.52	3.40	-1.65	n.s.

Table 5
Cooperating/Non-cooperating Students by Class
Using the Fisher Exact Probability Test

	0 = NC	1+ = C	
Class A	3	21	24
Class B	7	19	26
	10	40	50

$p = .12$

Table 6
Giving Credit to Another

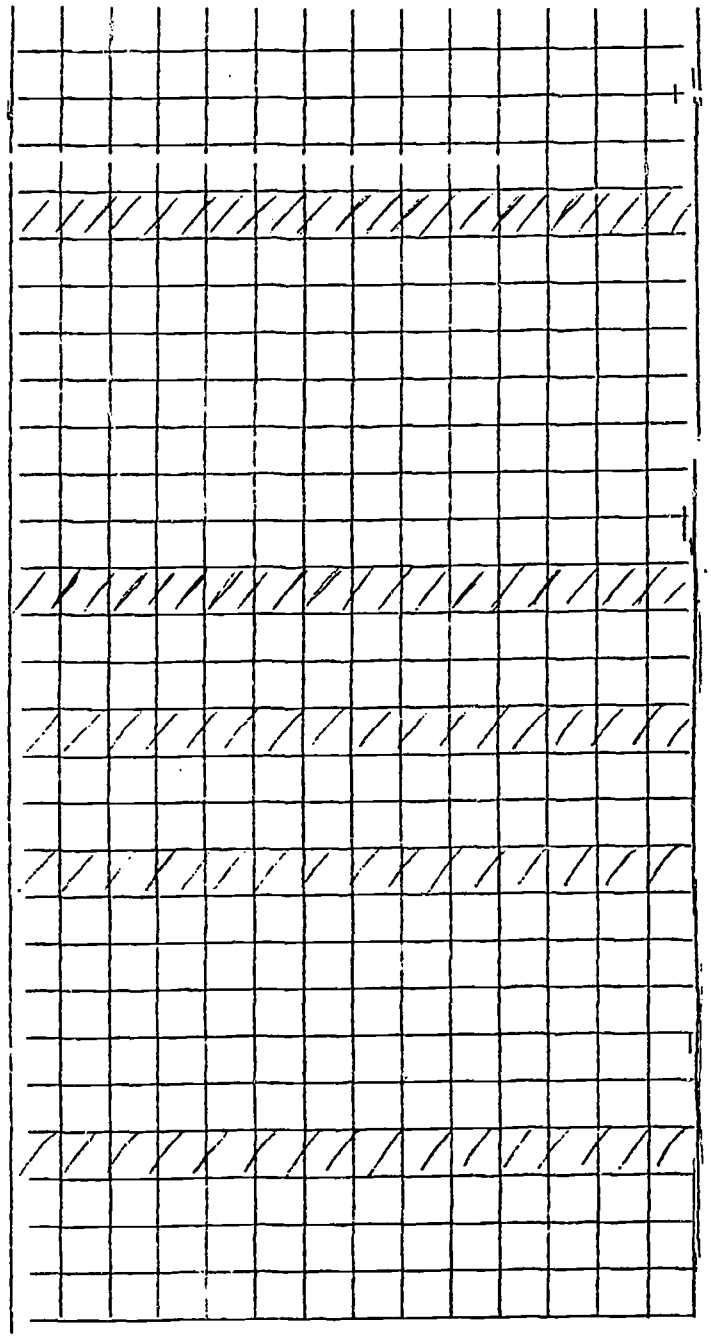
	Classroom A Mean	Classroom A SD	Classroom B Mean	Classroom B SD	t*	p
# prizes awarded	5.9	1.88	4.6	1.67	2.49	.01

* degrees of freedom = 44

Appendix I
Teacher Observation Schedule

Classroom_____ School_____ Date_____ Time_____
Observer_____ Teacher Aide_____

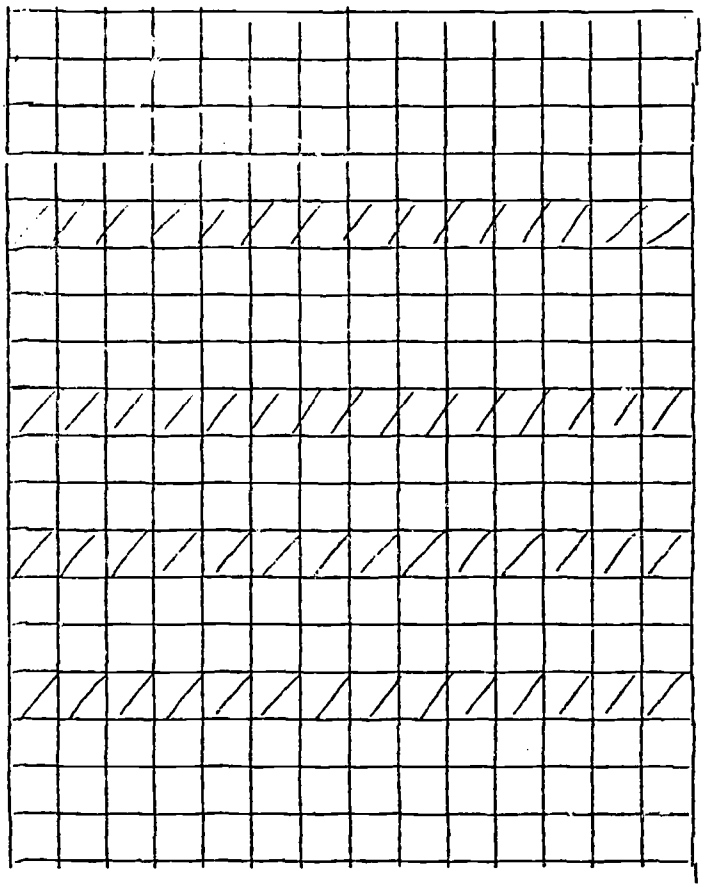
A. Academic Setting (T,NT)
B. Goals (I,G,M,N)
C. Interaction/with whom (I,G,W,N)
D. Specific Nature of Interaction-NI
   1. Asks Questions
      a. feeling
      b. if needs help
      c. problem or idea
      d. for help-task
      e. for help-solution
   2. Listens
   3. Turns over authority
   4. Participates
      a. as equal
      b. as leader
   5. Verbalizes Values
      a. pro helping, sharing
      b. against helping, sharing
   6. Sets or enforces limit, command
      a. threat
      b. social consequences
      c. personal consequences
      d. statement: reminder, direction
      e. offer of reward
   7. Praises, encourages, rewards
      a. for helping, sharing, etc.
      b. for academic, other
      c. tells child to praise



8. Punishes, discourages, criticizes
   a. for helping, sharing
   b. for hurting, not listening
   c. other; academic
   d. tells child to punish
9. Gives help
   a. helps solve
   b. solves
   c. lends emotional support
10. Help & Attention Withheld
   a. future help promised
   b. future help not promised

E. Expresses Feelings
   a. liking - pos. (V,N)
   b. disliking - neg. (V,N)

F. Evaluation
   a. explicit comparison
   b. implicit comparison
   c. no comparison



Appendix II

Behavior Categories included in the Teacher Observation Scale

Condition #1 - Interdependent goals and evaluation

Pro
i. (B) Goals - group

Against
i. (F) Evaluation - a. explicit comparison
b. implicit comparison
ii. (B) Goals - independent

Condition #2 - Modeling of helping and sharing

Pro
i. (D.9) Gives help - a. helps solve
b. solves
c. lends emotional support
ii. (D.7) Praises, encourages - a. for helping
b. for academic; other
c. tells child to praise
iii. (Ea.) Expresses feelings - positive
iv. (D.10a) Help withheld - Future help promised

Against
i. (D.8) Punishes, discourages, criticizes -
a) for helping
b) for hurting, not listening-
c) other; academic
d) tells child to punish
ii. (D.10b) Help withheld - future help not promised
iii. (Eb) Expresses feelings - negative

Condition #3 - Reward of helping-and sharing

Pro
i. (D7) Praises, encourages - a) for helping

Against
i. (D8) Punishes, criticizes, discourages -
a) for helping

Condition #4 - Awareness of feelings

Pro
i. (D1b) Asks if needs help
ii. (E) Expresses feelings - positive
- negative
iii. (A) Academic setting - talking allowed
iv. (C) Talking with whom - small group
v. (D2) Listens
vi. (D6b) Sets or enforces limit - social consequences

Against
i. (A) Academic setting - no talking allowed

Condition #5 - Use of control or power

Pro
i. (D3) Turns over authority
ii. (D4a) Participates as equal
iii. (D5a) Verbalizes values - pro helping, sharing

Against
i. (D5b) Verbalizes values - against helping, sharing