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ABSTRACT

As part of a project to develop formative evaluation systems for use in improving learning disabilities (LD) service programs in social adjustment, two studies were conducted to identify simple and efficient measures of children's social adjustment and to determine their relationship to other measures of a student's classroom social status. Results indicated that observed peer to target child behavior was related to the social status of the target child, with low status Ss being talked to less than either middle or high status Ss. Classroom differences in the strength of the relationship between observation data and criterion measures suggested the need for further research. (Author)

University of Minnesota

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RELATIONSHIPS AMONG CLASSROOM OBSERVATIONS OF SOCIAL ADJUSTMENT AND SOCIOMETRIC RATING SCALES

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Institute for Research on Learning Disabilities

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I. Adequacy of Norm-Referenced Data for Prediction of Success

II. Computer Simulation Research on the Assessment/Decision-making/Intervention Process

III. Comparative Research on Children Labeled LD and Children Failing Academically but not Labeled LD

IV. Surveys on In-the-Field Assessment, Decision Making, and Intervention

V. Ethological Research on Placement Team Decision Making

VI. Bias Following Assessment

VII. Reliability and Validity of Formative Evaluation Procedures

VIII. Data-Utilization Systems in Instructional Programming

Additional information on these research areas may be obtained by writing to the Editor at the Institute.

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Abstract

Two studies were conducted to identify simple and efficient measures of children's social adjustment and to determine their relationship to other measures of a student's classroom social status. Results indicated that observed peer to target child behavior was related to the social status of the target child, with low status children being talked to less than either middle or high status students. Classroom differences in the strength of the relationship between the observation data and criterion measures suggested the need for further research.

Introduction

The research reported here was conducted as part of a project that has as its purpose developing formative evaluation systems for teachers to use in improving learning disabilities service programs in social adjustment. The primary assumptions upon which that research project is based are:

(1) that the success of learning disabilities services is defined primarily by the extent to which those services improve the academic and social behavior goals of individual students served,

(2) that teachers can increase the success of learning disabilities services by systematically measuring student progress toward achievement of program goals and then adjusting student programs to improve that progress, and

(3) that the technology presently available for teachers to use in measuring student progress and adjusting programs based on measured progress is either not sufficient or has not been sufficiently tested.

The particular part of the research project described here was conducted to answer a first and critical question that is raised when developing a formative evaluation system in social adjustment: what student performance data can be routinely and easily obtained that validly index social adjustment? The question arises because, for several good reasons, available measures of social adjustment ordinarily

used cannot be used routinely in a formative evaluation system to monitor performance. First, available measures take too much time to administer. Second, the format of available measures excludes their use in the repeated measurement of performance required for formative evaluation.

The development of measurement procedures that can be incorporated relatively easily into the daily routine of most teachers working in learning disabilities programs is deemed desirable if intensive monitoring of program effects on student performance is to occur. The importance of intensively monitoring program effects is that such monitoring enables us to more precisely determine the appropriateness of services provided to individual students. Given the requirement in P.L. 94-142 (Federal Register, 1977) that each handicapped student be provided an "appropriate educational program" and our current inability to diagnose and prescribe effective programs (Arter & Jenkins, 1978), continuous evaluation of a student's program is the only way to achieve substantive compliance with the law (Deno & Mirkin, 1980).

Beyond compliance with the law, research on the use of intensive repeated measurement in formative evaluation of instruction has already yielded evidence bearing on its potential benefits (Bohannon, 1975; Crutcher & Hofmeister, 1975; Frumess, 1973; Lovitt, Schaff, & Sayre, 1970; Mirkin & Deno, 1979). The research findings are isolated, however. The research and development program of which the present studies are a part was designed to systematically construct formative evaluation procedures for learning disabilities programs that specify:

(1) What behaviors to measure when improved social adjustment is an IEP goal.

(2) How to repeatedly measure those behaviors reliably.

(3) Who should administer the measurement procedures.

(4) How often measurement should occur.

(5) How to obtain data most effectively.

(6) How to use repeated measurements of student performance to increase intervention effectiveness.

The strategy employed in the present research was first to review available literature on social adjustment to identify measures that might validly index social adjustment; second, to develop measurement procedures for taking data on those behaviors; and third, to determine the reliability and validity of the measures by correlating the scores obtained on them with scores from available measures of social adjustment that are highly respected, and technically adequate with respect to their psychometric properties.

To be considered for inclusion in a formative evaluation system the developed measures had to fulfill the following criteria:

(1) They must be valid with respect to widely used measures of social adjustment.

(2) They must be immediately sensitive to the effects of relatively small adjustments made in (a) instructional methods and materials, (b) motivational techniques, and (c) administrative arrangements (e.g., adjustments in grouping, setting for instruction, teacher/tutor, time of instruction, etc.).

(3) They must be easy to administer by teachers, parents, and students.

(4) They must include many parallel forms that are frequently administrable (daily, if necessary) to the same student.

(5) They must be time efficient.

(6) They must be inexpensive to produce.

(7) They must be unobtrusive with respect to routine instruction.

(8) They must be simple to teach to teachers, parents, and children.

Our hope is that regardless of personal philosophical, theoretical, historical, and current situational constraints those responsible for ensuring the quality of learning disabilities services will continuously evaluate the impacts of those services on the academic and social behaviors of their individual students. The measurement procedures that are described here are an important first step in the development of such an evaluation system.

Review of the Literature

Peer relationships play an important role in children's social adjustment. Peer interactions provide opportunities to rehearse life roles and engage in fantasy play. They also provide the context for practicing motor, social, and cognitive skills essential for normal adult functioning. Peers serve to provide emotional security and set norms for appropriate behavior (Asher, Oden, & Gottman, 1977). These and other important functions of peers have led Apolloni and Cooke (1973) to describe peer interaction as critical for normal development. There is evidence that children without friends are "at risk"; they are more likely to drop out of school, have higher incidences of mental health problems, and are more likely to engage in juvenile delinquency (for reviews, see Asher, 1978; Strain, Cooke, & Apolloni, 1976). Alschuler and Ivey (1972) reported the best predictors of all forms of adult maladjustment were poor peer relationships during the first three years of school and anti-social behavior during the last three years. Therefore, it appears important to help children who have peer relationship problems; evidence exists that children identified and receiving learning disabilities services have these problems (Bryan, 1974a, 1974b).

Remediation efforts have taken several avenues. First, researchers generally specify the conditions thought to influence social status. Second, they try to change the social status of children by manipulating these conditions. Gottlieb (1978) listed four possible conditions: (a) the nature of the social setting; (b) the characteristics and behavior of the child; (c) the characteristics of the peer group; and (d) the characteristics of others with whom the child interacts (teachers, parents, etc.). Of these four conditions, the characteristics and behavior of the child have received the most attention. Most training programs

have viewed low status as primarily a consequence of the social behavior of the child. It is also likely that children may lack friends because they may not be skilled at prompting and reinforcing approach behaviors in others.

Identifying Valid Indicators of Social Status

The isolation of specific behaviors that comprise competent social behavior has been the focus of much research in social adjustment. This research employs a criterion-related validity paradigm that examines behavior differences between criterion groups varying in status (Kupke, Hobbs, & Cheney, 1979) and validates the skills or behaviors that will result in higher status. If the critical behaviors that operate causatively can be identified, these may be added to or eliminated from the repertoires of low status children, and would presumably be the targets for instruction, and the basis for evaluating instruction.

Sociometric techniques are the most common measures used to identify criterion groups in social adjustment research. In general, sociometric measures require respondents to express how much they like or dislike classmates. In their review of social skills assessment methodology, Van Hasselt, Hersen, Bellack, and Whitehill (1979) listed two major reasons for employing sociometric devices: first, they have excellent psychometric properties, and second, their predictive validity is well documented (Hartup, 1970; Hymel & Asher, 1977).

Despite the usefulness of sociometric instruments for both criterion and identification purposes, they do have some limitations.

First, one typically does not know the sex of the raters, their prior experience with the subject, or other characteristics that might influence rater responses (Gottlieb, 1975). Second, as Gottlieb also indicated, in most studies subjects are rated by individuals:

> The assumption that individual ratings....represent a valid measure of interpersonal feelings that are likely to translate into observable behavior must be seriously questioned in the face of considerable data indicating that the group per se could influence attraction patterns among individual members. (Gottlieb, 1975, p. 295)

Sociometrics also are relatively intrusive measures of adjustment. There may be an ethical problem in asking children to name children they either like or do not like. Such requests may create self-fulfilling prophecies; further, they contradict adults' usual instructions that children should refrain from making derogatory comments about others. Another problem with using these measures is that they are likely to be less valid and sensitive when administered repeatedly (Asher & Markell, 1979). Further, sociometrics may foster critical attitudes, widen existing social status differences, and make more conspicuous the isolation or rejection of individual children (Lister, 1969). These limitations reduce the usefulness of sociometric instruments for evaluation of instructional or treatment programs. However, they are the most adequate measures of social adjustment currently available to use as criterion measures in research designed to identify behavior differences in children who vary in social status.

One problem with the criterion validity approach as it applies to existing social adjustment research is that it identifies behaviors that have been found to covary with social status. No causative statement can result from the identif cation of behaviors that correlate with sociometric measures. If chi..dren who differ in status also differ along some behavior dimension, we o:ly know that they differ. We do not know the cause of the difference. High positive correlations do not rule out the possibility that other backgrc und variables may be the basis for the correlations (some important component of the skill remains unspecified). Also other dimensions of the behavior such as frequency levels, duration levels, and critical interaction patterns of the variables may be important (Minkin, Braukmann, Minkin, Timbers, Timbers, Fixsen, Phillips, & Wolf, 1976).

Identifying critical social behaviors also necessarily requires that observations be focused on the behavior of the child in question. Exclusive attention to the behavior of children who differ in status has not been productive. As Hartup (1970) said, "Most investigators have found extremely modest correlations between peer acceptance and behavior" (p. 30). This may be due in part to the large number of variables that determine status in peer relationships and the complex nature of peer interactions. It may also be due to some inherent limitation of observational methodology for revealing critical relationships in status related variables. One such limitation is that in direct observation procedures (e.g., time sampling) behavior frequencies are summed against time segments. Summary scores may not accurately reflect the importance of low frequency behaviors that may critically affect status (Gottlieb, 1978). Physically abusive behavior may be one such example. Such behavior may occur so infrequently

as not to be represented in observation results. This type of target behavior may, however, seriously affect children's acceptance by their peers.

Another limitation of observational methodology is the lack of historical context. An initiation of one child to another that appears neutral or positive to an observer may be interpreted very differently by peers depending on past interactions with the child. As Gottlieb (1978) stated, "the failure to account for past experiences between the interactions may help to explain why the few studies that attempted to relate indices of observed behavior to social status found only low positive relationships" (p. 304). Low positive correlations also may be accounted for by the contextual nature of social skills. Appropriate social behavior must be defined within the context in which it occurs. When a child's positive acts are not appropriate, they do not fit group norms and the individual needs of other children. Consequently, they are not positive from the standpoint of recipient and are not reciprocated (Staub, 1979). Since different situations may call for different types of behavior, a child may behave in exactly the same manner in two different situations, with the behavior in one situation considered appropriate and the behavior in the other considered inappropriate. Similarly, different children emitting the same behavior may have different effects on their peers. An observer in the two situations, or for the two children, would likely mark two instances of that same behavior, even though the effect of the behavior on peers would not be the same.

Also, it appears that interactions between individuals (which is the observation point of most research) cannot be regarded as isolated events. They are parts of a series of mutual interactions extending over time.

Subtle and idiosyncratic signals that involve affective and cognitive phenomena may be as important as the behavior interactions. Yet, these signals may be beyond the detection capabilities of present behavior analysis techniques (Hinde & Stevenson-Hinde, 1976).

In review, researchers who use a criterion related validity paradigm to validate and specify critical social behaviors must confront several major problems. First, although sociometric instruments are relatively reliable, sensitive, and valid, they do not include important characteristics that may influence peer relations (such as rater variables and the effects on the group of individual responses). Second, correlations do not identify causation, and high correlations do not rule out the possibility that important background variables or components of the behavior remain unspecified. Third, sociometric measures focus attention on the behavior of children who differ in status. This type of focus has not been productive, possibly due to the complex nature of behavior, interactions, and variables that influence status, and possibly because of several limitations of observational research.

These problems do not imply, however, that the search for behaviors correlated with measures of social status cannot be fruitful, or that the criterion-related validity paradigm is inappropriate. Both endeavors encounter difficulty only when the purpose is to identify behaviors that cause high status. If the purpose is to develop an alternative approach to assessment of a child's status, such procedures may prove more useful. If behaviors can be identified that are valid, reliable, and sensitive indices of status, we can gather data on these behaviors to evaluate the effectiveness of interventions. In this case intervention strategies

become hypotheses, guesses about what is likely to work. Since effective instruction is highly dependent on situational and individual variables, a measure that serves the functions of both evaluation and assessment would be valuable. Such a measure would allow teachers to make a "best guess" about critical behaviors, to teach them to low status children, and to use the measure to assess intervention effectiveness.

The task is to identify those behaviors in the classroom that reflect the student's effectiveness. As suggested above, although critical interaction patterns may possess subtleties beyond behavior analytic techniques, it is possible that such interaction patterns are correlated with accessible behaviors. If we can identify social status indices and can discover conditions necessary to promote relationships having a high value on such indices, we may then specify the conditions necessary to promote the more intangible properties of such relationships (Hinde & Stevenson-Hinde, 1976).

Deno, Mirkin, and Shinn (1979) offered a behavioral perspective on teacher ratings that, if applied to peer relations, would focus the search for behavior correlates of status on peer behavior toward a target child. They suggested viewing teacher ratings as "an effect of the student's behavior on the environment which defines the occurrence of that behavior" (p. 51). As Deno et al. (1979) further explained, this is what behavioral-psychologists call a functional rather than a topographical definition. In free operant research the occurrence of a behavior is not defined by the shape of the response (e.g., how the rat pressed the bar), but by whether the electrical contact occurred as a consequence of the bar press. Teacher or peer ratings might be viewed as analogous to the electrical

contact. Regardless of what target behavior resulted in the rating, the rating is the critical effect. Similarly, in the search for behavior correlates of social status, the critical effect is peer evaluations. Regardless of the topography of behaviors of low status children, the function of those behaviors is similar; they elicit negative evaluations on such temporally restricted and situational bound measures as sociometrics. These in effect ask the child to evaluate the effect of others upon him or her in terms of social attraction. As previously discussed, behaviors and other variables that determine such responses are complex, subtle, and interactive. If a functional perspective is applied to the behavior of peers, we may turn our attention from that target behavior and concomitantly the search for behaviors that determine status, to behavior in response to the target and to behavior that may index or reflect a child's acceptance of another.

Topographic Research

This section of the review focuses on research that has analyzed the specific behaviors differentiating children with effective peer relations from children with poor peer relations. This type of research represents a topographic approach to the identification of critical social behaviors. As discussed, this has not been productive since the correlations found between specific behaviors and social status have been modest. The topographic research is summarized here for two reasons. First, a brief review highlights the types of behavior that have been investigated. Second, the literature in this area may guide efforts to develop a simple measure that can be used reliably and validly to index social status. The topographic research is summarized here in tabular form, with emphasis on subjects, measures, behaviors, and results (see Table 1).

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Insert Table 1 about here

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As with any body of research, the topographic research is variable in quality. The only criteria for inclusion in Table 1 was that each study's purpose was to identify behaviors related to social status. Inclusion does not imply that valid criterion measures were used or that subjects were selected appropriately. (For other reviews, see Asher, 1978; Asher, Oden, & Gottman, 1977; Combs & Slaby, 1977; Hartup, 1970; Van Hasselt, Bellack, Hersen, & Whitehill, 1979.)

In the studies in Table 1, several behaviors or categories of behavior consistently, though modestly, covaried with acceptance. These included friendliness and sociability, social visibility and outgoingness, compliance, cooperation, and acceptance of others. The studies also showed that although aggressive behavior did not covary with acceptance, aggression did covary with rejection. The studies listed in Table 1, as well as those reviewed by Hartup (1970) and Moore (1967) indicate that the selection of liked peers is unaffected by aggression, while the selection of disliked peers is affected by aggression. In general, the strongest relationships were found between sociometric rejection and observed negative behavior (Asher, Renshaw, Geraci, & Dor, 1979). The finding that aggressive behavior relates to rejection but not acceptance suggests that acceptance and rejection are separate dimensions of social status. Researchers initially believed that peer acceptance and rejection constituted a unidimensional factor, with social acceptance at one end and rejection at the other end of a single continuum. If this were true, a high negative correlation would be obtained between positive and negative nominations.

However, research evidence does not consistently reveal such an inverse relationship. Correlations are either moderately negatively correlated or not correlated at all (Hymel & Asher, 1977). Further, Hymel and Asher (1977) and Gottman (1977) also indicated that there may be dimensions of status in addition to those of acceptance or rejection (such as social isolation, social neglect).

Research on the Function of Children's Social Behavior

An alternative approach to assessing social status is to examine the social behaviors of children in terms of the social consequences of those behaviors. Available literature taking this perspective can be divided into: (a) research on the behaviors of peers and/or teachers toward high and low social status children, and (b) research examining the reciprocal nature of children's social behavior.

Teacher and peer behavior toward children. In a series of studies, Bryan found that children classified as learning disabled were less accepted (Bryan, 1974a) and that teachers were almost three times as likely to respond to verbal initiations of the more accepted normal children than the less accepted learning disabled students (Bryan, 1974a). While Bryan (1974b) did not find differences between the two groups in the proportion of time spent interacting with peers, learning disabled children were found to be almost twice as likely to be ignored by peers. In the 1974b study, Bryan also found that learning disabled children were less accepted by their peers, less skilled verbally, and perhaps less accurate in their comprehension of non-verbal communication. One interpretation of this research is that the behavior of learning disabled children either is not reinforcing or is punishing to others; consequently

peers and teachers approach and interact less with those children.

In a study with preschool children, Gottman (1977) found a low but statistically significant positive correlation between the amount of time 113 preschool Headstart children were alone and their scores on a measure of social rejection. Further, Bonney and Powell (1953) found that 10 sociometrically high first graders were less likely than other children to be alone during free play or activity periods. Although causality cannot be determined from these studies, the results indicate that time spent alone is an index of rejection. Amount of time spent alone may be a function of the failure to effectively reinforce the approaches of others or, as may be the case in rejection, time alone may be a measure of how aversive a child is to peers.

If time spent alone is a function of the aversiveness of a child's behavior, then one might expect to find not only that a child spends time alone, but also that the approaches that do occur are negative. In a longitudinal study of 13-year-old boys, Olweus (1977) found that unpopular boys were named more often as targets of aggressive behavior. Related to this finding, Campbell and Yarrow (1961) found that while 8 to 12-year-old children who were rated (using a guess-who sociometric measure) as more socially effective actually initiated as many, if not more, aggressive-disruptive acts they were the recipients of fewer such acts. While such a finding may seem contradictory, it underscores the potential validity of observing the behavior of peers as a measure of social status, rather than observing the behavior of the child in question. Apparently, the same behavior may function quite differently when emitted by different individuals.

Another peer response that has been related to social status is helping behavior. Marcus (1977) observed reciprocity of helping behavior in 19 preschool children. He found that high sociometric status children received more help than they gave. Low sociometric status children gave more help than they received. Interestingly, the quantity of helping behavior (both help given and received) did not discriminate between high and low status children. Marcus (1977) also reported a negative relationship between sociometric status and solicited help. Lower status children tended to ask for more help. Apparently a child's willingness to help another child may be related to how he or she feels about that child. In behavioral terms, helping a child may be a function of the reinforcing value of that child.

Friendly approaches by peers appear to discriminate between high and low status children. As part of a larger research program, Marshall and McCandless (1957) examined what they called the relationship between children's observed social acceptance and their sociometric status. Over five separate observation periods, correlations ranged from .34 to .58 between a child's sociometric status and observed instances of friendly approach by peers and play with other children. Similarly, Campbell and Yarrow (1961) found that socially effective children received acts termed "friendly-sociable" more frequently than other children.

Reciprocity of social behavior. One of the most frequently cited studies that examined the reciprocal nature of children's interactions was conducted by Charlesworth and Hartup (1967). In their observations, preschool children showed a high and statistically significant relationship (r = .79) between the total number of positive reinforcements given and

received. Also highly related were the number of individual children reinforced by a child and the number of individuals from whom the child received reinforcement ($r = .46$, $p < .01$). As more reinforcers were given, the number of children to whom they were distributed increased. In all, the most reinforcing children were found to scatter their positive reinforcers widely; the more they gave to others, the more they received. Similar research by Keller and Carlson (1974), Kohn (1966), and Marshall and McCandless (1957) reported much the same relationship between giving and receiving positive acts.

Conclusion

In their review of social adjustment research, Asher, Oden, and Gottman (1977) stated that "it seems....that children who lack friends tend not to positively reinforce interpersonal contact" (p. 13). The literature reviewed here supports their conclusion. If low status children do not effectively reinforce approaches by others and sometimes even punish them, we should find that they spend more time alone, and that they are recipients of more aversive behavior and less positive behavior. Thus, while it may be difficult to determine the child behaviors that lead to acceptance or rejection, it may be possible to ascertain acceptance or rejection by observing the responses of others to that child. The research on the reciprocal nature of children's behavior provides evidence to suggest that we should focus our attention on the behavior of peers toward the child of interest in order to validly index that child's status. If correct, it may be possible to develop measures of social status that are less intrusive than conventional sociometrics and ones that may be administered repeatedly without risk to students and possible reactivity to measurement.

Two Studies of Social Status

Two studies were conducted to identify simple and easily recordable behaviors that index social status - behaviors that could be the basis for formative evaluation of the effect of learning disabilities programs on the social adjustment of children served in the programs. The primary question was: What behaviors can be observed in schools to provide evidence of a child's social status?

Study I

Method

Subjects. Subjects were 67 third and fourth graders enrolled in a suburban Minneapolis public school. There were 14 boys and 10 girls in Class A (4th grade), 16 boys and 8 girls in Class B (4th grade), and 9 boys and 10 girls in Class C (3rd grade). Two of the students were identified as LD. Parental consent to participate was obtained for all students in these classrooms prior to inclusion in the study.

Instruments. Sociometric status inventories and teacher rating scales were used to estimate the social status of the children. Sociometric inventories included roster rating and peer nomination measures.

The roster and rating measure (see Appendix A) consisted of a list of names of all students in each class followed by the numbers one through five. This measure required each child to rate every other child in the class on the 1-5 scale in terms of how much he or she liked to "work with" and "play with" that child. Faces, ranging from a "frown face" to a

"smile face" were printed above the numbers, with the frown face corresponding to number one and the happy face corresponding to number five. This was done to facilitate comprehension and retention of the meaning of the scale. The child was instructed to circle the number that best described how he or she felt about "playing with" and "working with" each child. Prior to presentation of the actual rating forms, the purpose of the rating scale was discussed with each child individually. An individual practice session also was provided using the scale to rate common objects (e.g., ice cream) and activities (e.g., going to bed early). The practice session was continued until the investigator was confident that the child understood the procedure. The "play with" and "work with" measures were then presented on two separate forms. The peer nomination measures were given following completion of the two rating scales. Each child was asked to indicate which classmate he or she liked to "play with" and "work with" the most.

The roster rating scales and peer nominations were administered by the investigators on an individual basis, either in the back of the classroom or in the hallway outside the classroom. Completion of both devices took approximately 10 minutes per child. The order in which each child was presented "play with" and "work with" forms was random. Children were informed that no one except the investigators would see the forms and that no one would know what their ratings were.

Classroom teachers similarly completed roster ratings in which they rated each child on a 1-5 scale in terms of how much they felt other children liked to "play with" or "work with" that child (see Appendix B). Teachers also completed a social status rating scale on each child

that consisted of a series of eight statements related to social/interpersonal behavior. The teacher was requested to describe, in terms of a 1-5 scale, how well each statement described each child in the class. The statements included: "talks to other children," "is friendly and outgoing," "is too shy and withdrawn to make friends," "other children seem to like," "participates in class activities," "plays by himself most of the time," "gets into lots of arguments or fights with other children," and "has lots of friends." (Rating forms and specific instructions are presented in Appendix B.)

Observer training. Observer training was conducted for approximately 20 hours during the week immediately preceding the study. Prior to training, observers were given a study protocol that outlined the method and procedure of the study, provided operational definitions of target behaviors to be observed, and gave instructions for the observation and recording of data. Observational methdology also was discussed with the observers. The investigators and observers then practiced actual coding of behavior. Most of the observer practice involved watching a videotape of interacting children. In vivo practice consisted of observing interactions among research staff. Following each observation interval, the coding of behaviors was discussed until agreement was reached among the observers. Interobserver agreement, calculated by dividing the number of agreements by the number of agreements plus disagreements, averaged 70 percent during practice.

During the first three days in the classroom, observers learned the subjects' names and continued to practice the observation system. These

first three days also facilitated subjects' adaptation to the observers' presence.

Recording procedure. Behavior observations were made in different settings. In the first of these, 10 days of systematic observation and data collection were completed by two trained observers in Classes A and B. In the second setting, an analogue situation was constructed in which the investigators observed and recorded behavior of students from Class C as they functioned in "cooperative groups." The procedure utilized in Classrooms A and B will be discussed first.

Behaviors in classrooms A and B. The behaviors selected for observation were: (1) initiations by peers to target, (2) verbal interactions between peers and target (one-way and two-way interactions), (3) aversive behavior (peer to target and target to peer), (4) ignoring behavior, and (5) inappropriate behavior. Definitions of target behaviors and recording forms are provided in Appendix C.

Observations were made in a variety of situations (e.g., academic, between class periods, recess, etc.) using an interval recording system. The order in which children were observed was determined through randomization of the class list. Each child was observed for five consecutive six-second intervals. The next child on the list was then targeted and observed. Observers rotated through the class list as many times as possible within the observation period. An auditory beeper device was used to signal six-second intervals. Ten days of data were collected over a three-week period, excluding the initial three practice days. Observer reliability checks were made periodically throughout the study by having observers take data in the same classroom.

Each of the two observers spent approximately two to three hours in the two fourth grade classes each day. Observers alternated between classrooms on an hourly basis to help control for observer bias.

Interobserver agreement in Classrooms A and B. The two observers were instructed to code the behavior of the same children at four arbitrarily selected times during the study. The observers used one beep tone to ensure they were coding on the same interval. They were instructed to observe and record the behavior of each child in the classroom once.

Observer reliabilities on these four occasions were computed using three separate reliability formulas. The first formula, the most conservative, calculated interobserver agreement on scored intervals only. The formula involved dividing scored interval agreements by number of scored intervals (agreements plus disagreements). Using this method, the four reliability checks yielded scores of .50, .69, .70, and .74 ($\overline{X}$ = .66).

The second formula included unscored intervals in the calculation of interobserver agreement, but did not give them a weight equal to scored intervals. (For a complete description, see Harris & Lahey, 1978.) Briefly, scored interval agreements were weighted by multiplying the total number of scored interval agreements by the proportion of unscored intervals. The number of unscored intervals was then multipled by the proportion of scored intervals and the two products were added to ascertain an interobserver agreement coefficient. Using this formula, the coefficients of interobserver agreement for the four reliability checks were (in the same order as those above) .57, .73, .74, and .78 ($\overline{X}$ = .71).

The least conservative formula used for determining interobserver

agreement did not distinguish between scored and unscored intervals, and included both in the computation of reliability. This formula required dividing total agreements for scored and unscored intervals alike by the total number of observation intervals. Again, in the same order as reported above, coefficients of interobserver agreement were .87, .86, .86, and .89 ($\bar{X}$ = .87).

Class C behaviors. In Class C, the investigators organized the class into small groups of approximately four children each. Group membership was systematically rotated over five 30-minute observation sessions. The groups were presented with a different cooperative task during each session. Task completion was not dependent on cooperative behavior, but tasks were structured so as to facilitate interaction and cooperation among participants. The two observers rotated among the groups, systematically observing each child in the group for six, 10-second intervals. The auditory "beeper" device signaled interval lengths. Data were collected on the following behaviors: (1) verbal interaction (talks to), (2) aversive behavior, and (3) ignoring behavior. Verbal interaction was coded if the target child talked to a peer or a peer talked to the target. Aversive and ignoring behavior were coded if the target was ignored by peers or if the target was the object of aversive peer behavior. Data were collected on five separate occasions over a two-week period. (See Appendix D for behavior definitions, instructions, and data forms.)

Categories of observational data in Classes A and B. For each behavior observed, the recording system yielded data on the direction of the behavior (i.e., target to peer and/or peer to target); whether it occurred during an interval, and which classmates were involved. The one exception

to this was the "inappropriate" category which included target behavior only.

For purposes of analysis the behavior observation data for Classes A and B were organized into three general categories. Category 1, Peer to Target, included the following events in which peers were talking to the target:

Initiations by peers
Two-way interactions
One-way (peer to target) interactions

Category 2, Different Peers to Target, consisted of the number of different peers who emitted the Peer to Target behaviors listed in Category 1. The data in Category 2 reflect the diversity or spread in Peer to Target interactions rather than the level of those interactions. The measures included were:

Number of different peers initiating
Number of different peers in two-way interactions
Number of different peers in one-way interactions
Total number of different peers to target

Category 3, Target to Peers, consisted of data specifically on target student behavior toward peers. The measures were:

One-way interactions
Number of different peers talked to by target

Composite measures were created for two reasons. First, combining data on two or more measures should increase the variability, and consequently the magnitude of the correlation coefficient (Ladd, 1979). This is particularly useful since some of the behavior occurred at low frequency, thereby severely limiting variability. Second, since the purpose of this study was to identify a measure that could be used by

teachers, recording any instance of a peer talking to the target is simpler than discriminating between initiations, two-way interactions, or peer to target verbal behavior.

The observation data were scored in terms of the number of intervals in which the behavior occurred. Since variation existed in the number of observation minutes obtained for each student, the number of intervals in which behavior occurred was divided by the number of intervals. This computation resulted in a score representing the proportion of intervals in which the different behaviors occurred. The data on Number of Different Peers talking to Target and Number of Different Peers talked to by Target during the period of observation were obtained by recording the initials of each child involved in an interaction and then tallying the number of different initials recorded.

Although data were taken on the frequency of aversive, ignoring, and inappropriate behavior in Classes A and B, these data were deleted from the analysis due to their extremely low incidence. Over the 10 days of observation, out of approximately 6,000 opportunities for such behaviors to occur, only 51 instances of aversive behavior, 11 instances of ignoring behavior, and 20 instances of "inappropriate" behavior were observed overall in both classrooms.

Categories of observation in Class C. Observation of the small groups in Class C yielded five types of data: Peer talks to target, peer aversive behavior to target, peer ignoring target, target talks to specific peers, and target talks to peers in general. These data were derived from the following categories:

Initiations by peers
Two-way interactions

One-way (peer to target) interactions
Total peer to target

Analysis. Pearson product moment correlation coefficients were calculated to determine the degree of relationship between observed behaviors and sociometric criteria. The sociometric data consisted of the mean "play with" and "work with" scores each child received from same-sex peers on the roster-rating scale and the same-sex positive nominations. Same-sex data were used since third and fourth grade children typically bias against opposite-sex peers on sociometrics (Oden & Asher, 1977). Positive nomination data were converted for analysis by dividing the total number of nominations received by the total number of same-sex raters. This represented the percentage of same-sex peers from which nominations were received.

Results[1]

Tables 2 and 3 present the means, standard deviations, and ranges for sociometric criteria, teacher ratings, and behavior observations for Classes A and B.

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Insert Tables 2 and 3 about here

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The mean roster and rating "play with" and "work with" scores of Class B were higher than those of Class A (4.14 and 4.05, respectively, compared with 3.76 and 3.67) while the variances were quite similar. A similar pattern emerges for the mean "play with" and "work with" teacher ratings. Class B means were 4.61 and 4.75 compared to 3.50 and 3.46 in Class A. It should be noted, however, that for some of the behavioral measures (e.g., the composite measure of peer talks to target and

interactions) the variance in Class B was much less than in Class A. The variance of the mean teacher ratings also was lower in Class B than in Class A for both play and work ratings (.66 and .44 in Class A compared with 1.06 and 1.25 in Class B).

Table 4 presents correlation coefficients and p values for sociometric criteria and behavior data for Class A. As seen, there were consistently moderate and reliable relationships between play and work with ratings and peer to target behaviors (range .41 to .59). The range of correlations between peer to target behaviors and peer nominations was .23 to .66. This moderate relationship was also reflected in correlations between the number of different peers and play and work ratings (.42 to .55 and peer nominations (.29 to .61). Correlations between target to peer behaviors and sociometric criteria were somewhat lower (.27 to .47). Particularly strong was the relationship between sociometric criteria and the composite measures in Categories 1 and 2 (.67 to .74). The p values reported for these correlations establish the reliability of these relationships.

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Insert Table 4 ut here

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Table 5 presents correlation coefficients and p values for teacher ratings and sociometric criteria. As this table shows, consistently moderate relationships occurred between teachers' work and play ratings of children with child completed roster rating sociometric criteria (range .42 to .72). The highest correlations between sociometric criterion and teacher social status ratings were obtained on statements 4 ("other children seem to like") and 6 ("plays by self most of the time"). The correlations

were moderate for statement 4. Correlations for question 6 were consistently negative (-.50 to -.76).

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Insert Table 5 about here

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Table 6 presents correlation coefficients and p values for sociometric criteria and behavioral data from Class B. As is evident, correlations in Class B were not consistent with those obtained in Class A. A majority of the correlations were near zero or negative (-.40 to +.10).

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Insert Table 6 about here

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Table 7 presents correlation coefficients and p values for teacher ratings and sociometric criteria for Class B. Correlations between teacher play and work ratings and sociometric criteria were of moderate strength (.30 to .68). Correlations between teacher social status ratings and sociometric criteria are consistent with those of Class A, with the addition of moderate correlations on statement 8 "has lots of friends" (.56 to .74).

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Insert Table 7 about here

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Descriptive data for Class C are presented in Table 8. The results of the correlational analysis of sociometric criteria and behavioral data for this class are presented in Table 9. Only the correlation between "play with" roster ratings and peer aversives to target was sufficient to be reliable.

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Insert Tables 8 and 9 about here

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Table 10 presents the correlations of teacher "play with" and "work with" ratings and sociometric criteria. As is evident, these correlations were moderate (.33 to .63). The relationships between teacher statement ratings and sociometric criteria observed in Classes A and B were not evident in Class C, with the exception of statement 8, "has lots of friends." On this statement, the observed moderate correlations (.42 and .64) were consistent with, although somewhat lower than, those observed in Class B.

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Insert Table 10 about here

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Discussion

In Class A, correlations consistently reflected a high degree of relationship between peer to target behavioral data and all sociometric criteria. Correlations on the composite measures revealed even stronger relationships. Even though the correlations on target to peer behaviors were significant, they appear to be of a slightly smaller magnitude than those of peer to target behaviors. Correlations between teacher "play with" and "work with" roster ratings and the same sociometric ratings by students were similar in magnitude to the correlations between observation of individual behaviors and play and work ratings. Both composite measures (peer talks to target and total number of different peers talking to target), however, were more strongly associated with the sociometric ratings than were teacher ratings. The strength of the relationship between peer nominations and the composite measures was similar to that between peer nominations and teachers' ratings.

In contrast to Class A, a majority of the correlations for Class B were at or near zero; only a few were statistically significant, and

these were in the opposite direction from what was expected. There are a number of possible explanations for this occurrence. First, there may have been a difference in classroom structure. The organizational structure of a classroom may affect the social relations of the students. Hallinan (1976) reported that "open" in contrast to "traditional" classrooms had "more flexible liking hierarchies and fewer social isolates and leaders." The observers described Class B as more flexible and "open" and the teacher as more accepting, interacting more freely with the children, particularly in comparison with Class A. The descriptive data for Classes A and B showed that mean sociometric ratings in Class B were higher than in Class A, reflecting, perhaps, a generally greater level of acceptance among all students. If the social status hierarchies in Class A were more rigidly defined, peers might be more discriminating about those children with whom they interacted. In the apparently less rigid structure of Classroom B, interactions appeared to occur among a greater number of children. A less rigid hierarchy may be related to both a more open classroom and to the children's modeling of accepting behavior by the teacher. On some of the behavior measures (e.g., the composite measure of peer talks to target) the variance on the measures in Class B is much less than in Class A. The effect of this lowered variance would be a decrease in the magnitude of the correlations. In Class B, correlations between teacher play and work ratings and sociometric criteria were lower, and in some cases, negative.

The different items on the teacher social status rating scale correlated reliably in many instances with the sociometric criteria. Teacher ratings on the statement "other children seem to like" were moderately

to highly correlated with sociometrics, and ratings on "plays by self most of the time" correlated moderately and negatively with sociometrics. These findings were consistent across both classes.

Class C was organized into small task groups to facilitate observations and data collection. Small groups were organized to provide more opportunity than in the regular classroom for students to interact freely, yielding a greater amount of data. In comparing the results of Classes A and B with C, a number of differences were apparent. In Class B, most of the sociometric correlations with verbal behavior were low and nonsignificant. However, the correlations with aversive behaviors were moderate and negative in that class. Children lower in sociometric status also received more aversive behavior from their peers. These results are particularly inconsistent with those from Class A. In that class, peer to target verbal behaviors correlated moderately well with sociometric criteria. Data on aversive behavior in Class A were deleted from the analysis due to extremely low instances of those behaviors.

The artificial and imposed task group structure applied in Class C, or the requirements of the tasks themselves, may have in some way affected the interactions of the children. The task group situation appeared to provide an environment in which aversive behavior did correlate with social status. This may have occurred because total observation time was greater than in Classes A and B, thus resulting in more instances of behavior. The small group structure also may actually have facilitated aversive behavior since it placed children on a random basis in close physical proximity and encouraged interaction. In a regular classroom situation, children may avoid less-liked peers, whereas in group situations this is not possible. The relative infrequency of these behaviors in Classes A

and B could be the result of the methodology employed. Results from Class C suggest that with increased observation time, the frequency of aversive behavior directed toward a child might be included as an index of a child's status.

Study II

The number of different behaviors coded and the observational methodology employed in Study I constituted a data collection system far to inefficient for use in formative evaluation of learning disabilities services. The purpose of that study was to examine a variety of behaviors in an attempt to identify one or two that might validly index social status and then to design efficient procedures that teachers could use to collect data on those behaviors when intervening with children receiving learning disabilities services in the area of social adjustment.

The results of Study I, though mixed, suggested that a teacher might tally either occurrences of peers talking with target children, or the number of different peers talking with target children to index the social status of a student. Study II was undertaken to determine whether that conclusion was correct.

Method

Subjects. The students in Study II were from a suburban elementary public school in the metropolitan Minneapolis-St. Paul area. The sample consisted of 58 children from two third-grade classrooms. Class A contained 15 boys and 13 girls, and Class B contained 19 boys and 11 girls. Seven of the students were identified as LD. Parental consent was obtained for all students prior to inclusion in the study.

Instruments. The sociometric status instruments and teacher rating

scale used to estimate social acceptance in Study II were identical to those used in Study I, with one exception. After completing the roster and rating scales, students were asked to circle the names of the children with whom they liked to play and work (unlimited choice). The children were then asked to pick from that set the three with whom he/she liked to play/work the most (pick three). Methods and procedure for administration of these measures were identical to those in Study I.

Observer training. Observers were trained by the investigators during the week prior to beginning the study. Training consisted of a discussion of observational methodology and practice using videotape. Observers spent the first three days of the study in the classroom continuing to practice the observational system, learning the children's names, and allowing the students to adapt to their presence.

Reliability. Reliability checks were conducted in the manner described in Study I. Interobserver reliability checks were made at three randomly selected times. As in Study I, the two observers used one beeper tone and each observed the same children until they had rotated through the class list once. The same formulae as in Study I were used to compute reliabilities.

The first formula, in which scored interval agreements were divided by the total number of scored intervals (scored interval agreements plus scored interval disagreements), yielded coefficients of .60, .78, and .80 ($\bar{X}$ = .73). The second formula, in which unscored intervals were included but given less weight, yielded coefficients of .65, .76, and .83 ($\bar{X}$ = .75). The third formula, in which scored and unscored intervals were equally weighted, yielded coefficients of .93, .87, and .95 ($\bar{X}$ = .92).

Procedure. Behavior observations were made by two trained observers

in the two third grade classes over a three week period. Observers each spent two hours per day in the classrooms. Twelve days of data were obtained after the first three days of the study, which were provided for practice and the learning of names. Procedures for learning the children's names, rotating between classrooms, and varying the situations in which data were collected were the same as those in Study I.

Data were collected on two events: (1) frequency of peer talks to target, and (2) number of different peers with whom interaction occurred. "Peers talk to target" included any instance of the target being talked to, whether an initiation by a peer, response by a peer to target initiation, or as part of an ongoing exchange. To determine the number of different peers with whom an interaction occurred, each instance of an interaction with a different peer for that observation day was tallied.

A change was made in the recording procedure used in Study I to approximate what might actually be done by a classroom teacher. First, the observation interval was increased from six to 30 seconds. Second, an event rather than an interval recording system was used. Again, children were observed in random order and an auditory beeper device signaled interval lengths. During an observation interval, when a peer talked to the target child, the initials of the peer were recorded on the data form. An additional "peer talking to target" event could be recorded for the same peer during the 30 second observation interval only if the two interactions were separated by an interaction from another peer. If the same peer talked to the target child at the beginning on an interval and then again at the end of the recording interval, but no other peer to target interaction occurred, this was recorded as only one instance of behavior. The length of the verbal interaction was not a variable. This method was chosen since it

seemed to be a simple recording system that could be utilized by classroom teachers. Thus, the data provided an index of both the number of different peers talking to the target and the number of times a peer talked to the target child.

Results

Table 11 presents the descriptive data from the sociometric measures and the observations for each class separately. As can be seen by inspecting Table 11, the mean "play with" and "work with" roster ratings for both classes are high and positive (about 4 on the 5 point scale). The students tended not to use the lower end of the scale; the result was a truncated and skewed distribution. The peer nomination data show that the means for both play and work selections fall between 2 and 3.

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Insert Table 11 about here

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The correlations between sociometric criteria and the behavioral data for each classroom separately are included in Tables 12 and 13. Examination of these correlation matrices reveals that, as in Study I, some differences existed between classes. Virtually all of the obtained correlations between the observational data and the criterion variables were statistically significant at conventional levels for the data from Class B. In contrast, only the correlations for peer talking to target appear to be reliable in Class A, and even those p values were marginal. In no instance in Class A did the number of different peers talking with the target child correlate with a criterion variable.

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Insert Tables 12 and 13 about here

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Table 14 presents the correlations between the observational data and the criterion variables for both classes combined. Examination of Table 14 shows that peer talking to target consistently and moderately correlated with all criterion measures; all coefficients were reliable. In contrast, the number of different peers talking with the target child failed to reliably correlate with the criterion variables.

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Insert Table 14 about here

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Correlations between teacher ratings on both the roster rating scale and the social status questionnaire and student sociometric ratings for the combined classes in Study II are presented in Table 15. The correlations in Table 15 were based on z-score transformations. The correlations for teacher ratings of play and work for their students are moderate and consistent across student derived sociometric measures, ranging from .48 to .55. All teacher roster rating coefficients were reliable. As in Study I, teacher ratings on Questions 5, 6, and 8 consistently correlated with the student sociometric data. The teacher ratings on these questions described the students with respect to class participation, time spent playing alone, and the number of friends a student had.

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Insert Table 15 about here

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A second approach taken to analyze the data consisted of classifying the students into high, middle, and low status groups using each of the criterion measures. Such an analysis is useful conceptually because it permits a direct comparison of the observational data for the low status students with those data for the middle and high status students. Such

a comparison is helpful because the potentially low status of students in LD programs was the primary focus of this research. The question to be answered is whether the observational data can be used to index group membership. The analysis is also useful methodologically because, in part, it avoids the probable attenuation of coefficients that would be produced by the truncated and skewed distributions in the correlational analyses.

To do the comparative analysis, students were classified on each criterion variable using the z-score transformations. Students were classified as High Status if their z-scores exceeded .70 standard deviations above the mean of the group, and as Low Status if their z-scores were .70 standard deviations below the mean. All other students were classified as Middle Status. The mean z-score on the observational data was then computed for each group, and a set of planned comparisons was made using t tests. The results of this analysis are presented in Table 16.

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Insert Table 16 about here

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The comparative analysis revealed that the students classified as low status reliably differed from the remainder of their classmates with respect to how frequently their peers talked with them. Inspection of the z-score means in Table 16 reveals that the low frequency of Peer Talking to Target in the low group was a salient difference among the groups. The mean z-score on this variable was consistently farther below the combined sample mean for the low status students (ranging from -.71 to -.78) than it was above the combined sample mean for the high status students (ranging from .50 to .59). Further, the difference between the z-scores means for the low and middle groups ranged from .76 to .94 standard

deviations whereas the difference between middle and high groups ranged from .36 to .52 standard deviations. Consistent with this is the fact that of the six comparisons between middle and high groups, only one was statistically significant at p values of .05 or less.

A second finding in the comparative analysis was that low status students also differed from the remainder of the students with respect to the number of different peers who talked with them. The differences were less reliable, however, with associated p values ranging from .04 when classified on the Peer Nomination variable to .15 when classified on the Roster Rating score.

Discussion

The results of Study II provide more reliable evidence on the degree to which the frequency of peers' initiations toward children can be used as a social adjustment index.

In Study II the behaviors selected for observation most closely resembled the two composite peer to target measures in Study I. These behavior categories were: (a) the number of times a child was talked to by peers; and (b) the number of different peers who talked to the observed child. In Study I both categories showed strong relationships with sociometric criterion measures in one class but not in the other.

In Study II, however, the data on peers talking to target students were reliably and consistently related to the sociometric measures. The results with respect to the number of different peers who talked with that target student were somewhat less reliable, but did provide evidence that the spread as well as the frequency of peer interaction might usefully index social status. Perhaps most noteworthy was that peer-to-target

verbal interactions clearly and reliably discriminated low status students from their peers. This finding is particularly important for the present research, since the research was designed to identify observational data that would index a child's low status. In the present study, lack of peer verbal interactions more surely characterized low status children than a high degree of peer verbal interactions set apart high status students.

Conclusion

As stated initially, the purpose of this research was to identify behaviors that could be repeatedly measured to evaluate the social adjustment of children receiving learning disabilities services. In doing so, we have focused simply on variations in the frequency of peer initiations to target children. Staub (1979) has said that it is an important index of the validity of sociometric measures, yet available information on this relationship is not extensive or consistent. Most studies of the present type examine the relationship between the social behavior of a target child and the child's sociometric status. The assumption is that variations in topographically defined behaviors emitted by the target child determine the child's social status. While it is possible to reliably observe what a child does, we have difficulty determining the effect of a child's behavior on his or her peers unless we observe the peers' behavior toward him or her. The same behavior emitted by two different children may yield different social outcomes.

The results of the two studies reported here indicate that information on peer responses toward target children relate to a child's social status and may be a useful index of low social status. Since the research presented here also leads to the conclusion that teacher ratings might be used to assess a child's social adjustment, we should return to the criterion characteristics for formative measures presented at the outset to evaluate the potential of both the observational data and the teacher ratings for use in systematic formative evaluation of LD services.

First, the concurrent validity of the observational data is only moderate. When frequency of peer verbal behavior directed toward an observed child was correlated with several sociometric criterion measures

in four fourth grade classes, the obtained coefficients were high in one class, moderate in two, and unreliable in the third. The results provide quite persuasive evidence that a relationship exists between the frequency with which peers interact verbally with a target child and that child's social status. Such a finding is noteworthy in the general territory of research on the relationship between children's classroom behavior and their social status, and we should not minimize the potential value of the data for those with more theoretically oriented concerns.

For purposes of the present research, however, we find the results less satisfactory. Since we seek measures that can be used continuously to evaluate the effect of learning disabilities services on a child's social adjustment, measures accounting for a large proportion of variance on criterion measures are desirable. How strong the validity coefficients should be is not clear, however. To quote Nunally (1978), "the higher the correlation, the better" (p. 89). He states further, however, that "In most prediction problems, it is reasonable to expect modest correlations between a criterion and either an individual predictor test or a combination of predictor tests" (p. 90). The moderate correlations obtained in the present study were, in fact, greater than the .30 to .40 coefficients Nunally cited as potentially useful in decision making. Perhaps most satisfactory is the fact that the mean frequency of peer talking to low status children did reliably discriminate them from their peers.

The validity of teacher ratings with peer sociometric measures in the present research paralleled that of the observational measures. Whether teacher ratings can be used in continuous formative evaluation is

questionable, however. Teacher ratings may be subject to biasing influences, such as expectations for improvement. Teacher ratings appear to fall short on at least two additional counts. First, the sensitivity of teacher ratings to short duration treatment effects is probably low and susceptible to bias. Second, frequent administration of ratings, while possible, is likely to affect concurrent validity since stereotypic ratings are likely as frequency increases. Once a teacher categorizes a student, future ratings are likely to be a function of the teacher's prior ratings rather than the student's status. On the other hand, teacher ratings are efficient and relatively unobtrusive. If their probable shortcomings are not demonstrated, they may prove to be a valuable source of data for use in the formative evaluation of learning disabilities services.

In conclusion, the results of the research for simple measures of social adjustment that could be used in the systematic formative evaluation of learning disabilities services are encouraging. Peer to target child behavior is related to the social status of the target child. Low status children, in particular, are talked to less than either middle or high status students. Differences from class to class in the strength of that relationship are troublesome, however. Class structure as a background variable may limit the extent to which observed peer behavior toward the target student will validly index social status in a given classroom. Only further research can clarify this issue. Finally, whether repeatedly measuring peer behavior toward a target child and using those data to evaluate program effects can lead to improved learning disabilities services is, as yet, untested. Subsequent research by the Minnesota Institute for Research on Learning Disabilities will attempt to address that issue.

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Footnote

[1]One major limitation of the present research should be noted. It was inadvertently discovered that one of the observers in Study I had serious reservations about the value of the observational system, and expressed confidentially that she was not adequately trained to collect the data. Further, her reservations led her to express her dissatisfactions to the teacher in Class B while the study was in progress. Since the procedure for checking interobserver agreement involved telling the observers when to do reliability checking, the obtained coefficients may not, in fact, represent what the observer's consistency was throughout the study.

The same observer was not used in Study II, so such biases would not have influenced those data. Further, the simplicity of the Study II observation categories and recording procedures provide a basis for greater confidence in the data obtained in that study.

Table 1

Selected Review of Topographic Studies

Study	Subjects	Sociometric Criterion	Behaviors Assessed	Results
Bonney & Powell (1953)	20 M & F Gr 1	Nomination sociometric	Observed social behavior	More popular Ss were more cooperative, less alone, more conforming, smiled more
Brown & Brown (1976)	98 M & F Gr 4 & 5	Social distance scale	Fundamental interpersonal orientation scale (FIRO) Interpersonal needs	Popular Ss wanted to include others and wanted to be included by others in activities more than less popular children
Bryan (1974b)	90 LD Gr 2	Nomination sociometric	Observed social interaction in bowling game	Rejected Ss showed more negative behavior. Positive behavior did not distinguish sociometric groups. Rejected Ss made more intrusive comments
Campbell & Yarrow (1961)	260 M & F 8-12 yrs	Social effect measure (Ss who were liked or disliked)	Social behavior	More "socially effective" Ss received and initiated more friendly, sociable acts
Deutsch (1976)	Female Preschool	Sociometric	Friendly interaction communicative egocentrism scale	Ss with greater communication skills were more frequently observed in friendly interaction. Sociometric status was unrelated to interaction
Dunnington (1957)	15 M & F Preschool	Interview sociometric	Aggression, verbal interaction	More popular Ss showed a greater proportion of positive expression to aggressive behavior
Gottlieb (1975)	324 elementary EMRS	Social acceptance and social rejection measures	Teacher and peer ratings of perceived misbehavior	Rejection was significantly correlated with misbehavior; acceptance was not
Gottlieb & Budoff (1974)	22 EMRS 41 typical 7-13 yrs	Roster rating sociometric	12 categories of behavior (positive & negative verbal attention, aggression)	More popular Ss were more verbally aggressive
Gottman (1977)	113 M & F Preschool	Roster rating & nomination sociometric	Type and frequency of peer interaction	Rejected Ss engaged in more negative peer interaction and were more tuned out and alone
Gottman, Gonso, & Rasmussen (1975)	198 M & F Gr 3 & 4	List best friends (any #)	Social skills Social interaction	Popular Ss scored higher on friendmaking role play and distributed and received more positive reinforcers (approach and compliments)

Hartup, Glazer, & Charlesworth (1967)	32 M & F Preschool	Pictures pick 3 like; pick 3 don't like	Giving and receiving positive reinforcement. Giving and receiving negative reinforcement	Acceptance was correlated significantly with giving positive reinforcement. Rejection was correlated significantly with giving negative reinforcement
Hymel & Asher (1977)	24 M & F Gr 3-5	Roster and Rating Play and Work Pos. & neg. nominations	Alone, interacting with peers (cooperative, affectionate, derogative, compliant)	After "coaching procedure" training, trained and untrained Ss were not different on any observed behavior on sociometric measures
Ladd (1979)	36 M & F Gr 3	Play-Roster and rating sociometric	Questions, leads, supports, negative social, non-social	After "coaching procedure" training, trained Ss were higher in questions, leads, and non-social
Ladd & Oden (1979)	Gr 3 & 5	3 sociometric measures; roster and rating; best friends	Ss asked to suggest helpful strategies for cartoon children who were teased, yelled at, having school problems	Children's unique or deviant ideas about helpfulness were found to be predictive of low sociometric ratings
Marcus (1977)	19 M & F Preschool	Picture sociometric teacher rating	Helping behavior (10 categories)	More popular children received more help than they gave. Less popular children gave more help than they received
Marshall & McCandless (1957)	36 M & F Preschool	Pictures from Hartup et al., 1967 Teacher ratings Ss played with most	Cooperation Friendly approach Hostility Conversation	More popular Ss were more cooperative, friendly, and less hostile
McGuire (1973)	132 M & F Preschool	Pictures from Hartup et al., 1967	Aggressive and positive behaviors	High aggressive males were more unpopular High aggressive females were more popular
Oden & Asher (1977)	109 M & F Gr 3 & 4	Name 3 best friends work and play roster rating	Participation, cooperation, communication, validation-support	Low status Ss significantly improved status after training; "coaching procedure" on 4 behavior observations did not show increases
Olweus (1977)	286 males Gr 6 & 7	Sociometric rating	Aggression ratings by peers	Unpopularity was significantly correlated with rated aggression. Popularity was not related to aggression

Table 2

Descriptive Statistics for Class A in Study I (N=23)

Variables	$\bar{X}$	SD	Range
Sociometric Criteria			
Roster-rating: Play	3.76	.66	2.43-4.69
Roster-rating: Work	3.67	.65	2.31-4.62
Positive nominations[a]	.06	.02	.01-.09
Teacher Ratings			
Play	3.50	1.06	1-5
Work	3.46	1.25	1-5
Behavior Observations			
Category 1[b]			
Initiations	.03	.24	0-.80
Interactions (2-way)	.18	.93	.36-4.35
Interactions (1-way)	.01	.16	0-.46
Total	.73	4.24	1.27-14.91
Category 2[c]			
Initiations	2.70	1.80	0-6
Interactions (2-way)	5.70	2.09	2-10
Interactions (1-way)	1.20	1.46	0-5
Total	9.70	3.92	3-18
Category 3[d]			
Interactions (1-way)	.03	.23	0-.80
Number of Peers	2.92	1.74	0-6

[a]Positive nominations criterion includes same-sex nominations only.

[b]Peer Talks to Target, in rates.

[c]Number of Different Peers to Target.

[d]Target Talks to Peer.

Table 3

Descriptive Statistics for Class B in Study I (N=24)

Variables	$\bar{X}$	SD	Range
Sociometric Criteria			
Roster-rating: Play	4.14	.63	2.73-5.00
Roster-rating: Work	4.05	.73	2.33-5.00
Positive nominations[a]	.06	.03	.02-1.00
Teacher Ratings			
Play	4.61	.66	3-5
Work	4.75	.44	4-5
Behavior Observations			
Category 1[b]			
Initiations	.02	.11	0-.47
Interactions (2-way)	.20	.66	.96-3.53
Interactions (1-way)	.02	.15	0-.67
Total	.67	2.33	1.84-13.00
Category 2[c]			
Initiations	2.42	1.25	0-6
Interactions (2-way)	7.79	2.34	4-12
Interactions (1-way)	1.42	.88	0-3
Total	11.62	3.28	6-19
Category 3[d]			
Interactions (1-way)	.03	.20	.08-.96
Number of Peers	2.96	1.43	1-7

[a]Positive nominations criterion includes same-sex nominations only.

[b]Peer Talks to Target, in rates.

[c]Number of Different Peers to Target.

[d]Target Talks to Peer.

Table 4

Correlations of Behavior Data with Sociometric Criteria for Class A in Study I[a]

Behavior Data	Sociometric Roster Ratings by Students		
	Play	Work	Peer Nominations
Category 1. Peer Talks to Target			
Initiations	.57*	.59**	.66**
Interactions (2-way)	.52*	.46*	.32
Interactions (1-way)	.41*	.47*	.23
Total	.73**	.74**	.66**
Category 2. Number of Different Peers			
Initiations	.55*	.52*	.61**
Interactions (2-way)	.53*	.51*	.39*
Interactions (1-way)	.43*	.42*	.29
Total	.70**	.67**	.60**
Category 3. Target Talks to Peer			
Talks (1-way)	.47*	.34*	.36*
Number of Peers	.43*	.33	.27

[a]Significance levels of correlations are indicated as follows:
* $p < .05$
** $p < .001$

Table 5

Correlations of Teacher Ratings with Sociometric Criteria for Class A in Study I[a]

Teacher Ratings	Sociometric Roster Ratings by Students: Play	Work	Peer Nominations
Roster Rating			
Play	.65**	.49*	.72**
Work	.56*	.42*	.62**
Social Status Scale[b]			
1	.11	.06	.13
2	.20	.16	.24
3	.22	.26	.03
4	.63**	.46*	.71**
5	.31	.44*	.53*
6	-.64**	-.50*	-.76**
7	.20	-.01	.00
8	.47*	.35*	.41*

[a]Significance levels of correlations are indicated as follows:
* $p < .05$
** $p < .001$

[b]Numbers refer to items as follows:
1 - Talks to other children
2 - Is outgoing and friendly
3 - Is too shy and withdrawn to make friends
4 - Other children seem to like
5 - Participates in class activities
6 - Plays by himself most of the time
7 - Gets into lots of arguments or fights with other children
8 - Has lots of friends

Table 6

Correlations of Behavior Data with Sociometric Criteria for Class B in Study I[a]

Behavior Data	Sociometric Roster Ratings by Students: Play	Work	Peer Nominations
Category 1. Peer Talks to Target			
Initiations	.00	-.10	.10
Interactions (2-way)	-.05	-.07	.01
Interactions (1-way)	-.04	.03	.02
Total	-.06	-.06	.01
Category 2. Number of Different Peers			
Initiations	.01	-.05	.07
Interactions (2-way)	-.40*	-.37*	-.25
Interactions (1-way)	.01	.08	-.06
Total	-.28	-.26	-.17
Category 3. Target Talks to Peer			
Talks (1-way)	-.12	-.17	-.10
Number of Peers	-.02	-.04	-.13

[a]Significance level of $p < .05$ is indicated by *.

Table 7

Correlations of Teacher Ratings with Sociometric Criteria for Class B in Study I[a]

Teacher Ratings	Sociometric Roster Ratings by Students: Play	Work	Peer Nominations
Roster Rating			
Play	.53*	.68**	.51*
Work	.30*	.37*	.39*
Social Status Scale[b]			
1	-.05	-.03	-.06
2	.36*	.04	.35*
3	-.24	-.34*	-.16
4	.64**	.75**	.57*
5	.38*	.49*	.29*
6	-.41*	-.49*	-.38*
7	-.26	-.23	-.23
8	.63**	.74**	.56*

[a]Significance levels of correlations are indicated as follows:
* $p < .05$
** $p < .001$

[b]Numbers refer to items as follows:
1 - Talks to other children
2 - Is outgoing and friendly
3 - Is too shy and withdrawn to make friends
4 - Other children seem to like
5 - Participates in class activities
6 - Plays by himself most of the time
7 - Gets into lots of arguments or fights with other children
8 - Has lots of friends

Table 8

Descriptive Statistics for Class C in Study I (N=19)

Variables	$\bar{X}$	S.D.	Range
Sociometric Criteria			
Roster-rating: Play	3.88	.47	3.11-5.00
Roster-rating: Work	3.81	.42	3.11-4.50
Behavior Observations[a]			
Talks by Target to Peer	2.75	1.43	.44-5.24
Talks by Target	1.2	.86	.10-3.48
Talks to Target	2.70	1.52	.56-5.86
Aversive Behavior to Target	.09	.11	0
Target Ignored	.06	.08	0
Observation Time (minutes)	20.68	1.97	15-24

[a]Numbers presented are rates (behaviors per minute)

Table 9

Correlations of Observation Data with Sociometric Criteria for Class C in Study I (N=19)[a]

Behavior	Roster Ratings	
	Play	Work
Target to Peer		
Talks to Specific Peers	.21	.31*
Talks to Peers in General	.13	-.16
Peer to Target		
Talks	.11	.23
Aversives	-.52**	-.46*
Ignores	-.39	.15

[a]Significance levels of correlations are indicated as follows:
* $p < .10$
** $p < .05$

Table 10

Correlations of Teacher Ratings with Sociometric Criteria for Class C in Study I[a]

Teacher Ratings	Sociometric Roster Ratings by Students: Play	Work
Roster Rating		
Play	.33	.52*
Work	.36	.63*
Social Status Scale[b]		
1	-.18	-.31
2	.39*	.52*
3	.45*	.56*
4	-.31	-.57*
5	.22	.25
6	.07	.13
7	.03	.06
8	.42*	.64*

[a]Significance level of $p < .05$ is indicated by *

[b]Numbers refer to items as follows:
1 - Talks to other children
2 - Is outgoing and friendly
3 - Is too shy and withdrawn to make friends
4 - Other children seem to like
5 - Participates in class activities
6 - Plays by himself most of the time
7 - Gets into lots of arguments or fights with other children
8 - Has lots of friends

Table 11

Means and Standard Deviations for Criterion Measures and Observational Data in Study II

Variables	Class A (N=28) $\bar{X}$	Class A (N=28) SD	Class B (N=30) $\bar{X}$	Class B (N=30) SD
Sociometric Criteria				
Roster-rating: Play	4.05	.49	3.93	.71
Roster-rating: Work	4.06	.45	3.76	.68
Peer Nomination: Play[a]	2.79	2.13	2.50	1.74
Peer Nomination: Work[a]	2.39	1.99	2.23	1.68
Behavior Observations				
Number of Talks to Target (per minute)	.99	.29	.76	.29
Number of Different Peers to Target (per minute)	.49	.14	.39	.13
Observation Time (minutes)	19.57	2.69	18.95	3.08

[a]Peer nomination means represent the average number of times a child was selected.

Table 12

Correlations Between Observational Data and Criterion Variables for Class A in Study II (N=28)[a]

	Number of Different Peers	Roster Ratings Play	Roster Ratings Work	Peer Nominations Play	Peer Nominations Work	Teacher Rating
Observations						
Peer to Target Talking	.54***	.38**	.29*	.41**	.30*	.31**
Number of Different Peers		.05	.05	.08	.03	.08
Roster Ratings						
Play			.81***	.62***	.44***	.29*
Work				.64***	.40**	.22
Peer Nominations						
Play					.75***	.38**
Work						.27*

[a]Significance levels of correlations are indicated as follows:
* $p < .10$
** $p < .05$
*** $p < .01$

Table 13

Correlations Between Observational Data and Criterion Variables for Class B in Study II (N=30)[a]

	Number of Different Peers	Roster Ratings Play	Roster Ratings Work	Peer Nominations Play	Peer Nominations Work	Teacher Rating
Observations						
Peer to Target Talking	.43***	.47***	.48***	.60***	.35**	.51***
Number of Different Peers		.24*	.27*	.51***	.47***	.38**
Roster Ratings						
Play			.93***	.53***	.57***	.68***
Work				.52***	.63***	.67***
Peer Nominations						
Play					.69***	.57***
Work						.55***

[a]Significance levels of correlations are indicated as follows:
* $p < .10$
** $p < .05$
*** $p < .01$

Table 14

Correlations of Sociometric Criteria with Observation Data for Combined Classes in Study II (N=58)[a]

Sociometric Criteria	Number of Talks to Target	Number of Different Peers to Target
Roster-Rating: Play	.43**	.14
Roster-Rating: Work	.39**	.16
Peer Nominations		
Play	.48**	.17
Work	.36**	.16

[a]All p values for correlations between Number of Talks to Target and criterion variables are less than .001(**).

Table 15

Correlations of Teacher Ratings with Sociometric Criteria for Combined Classes in Study II (N=58)[a]

Teacher Ratings	Student Roster Ratings		Peer Nominations	
	Play	Work	Play	Work
Roster Rating				
Play	.50***	.49***	.50***	.49***
Work	.49***	.48***	.55***	.51***
Social Status Scale[b]				
1	.22**	.15	.27**	.19*
2	-.01	.04	.26**	.30***
3	-.06	-.03	-.16	.15
4	-.22**	-.10	-.12	-.10
5	.33***	.33***	.33***	.28**
6	-.57***	-.54***	-.52***	-.50***
7	-.08	-.12	-.26**	-.17*
8	.36***	.33***	.34***	.33***

[a]Significance levels of correlations are indicated as follows:
* $p < .10$
** $p < .05$
*** $p < .01$

[b]Numbers refer to items as follows:
1 - Talks to other children
2 - Is outgoing and friendly
3 - Is too shy and withdrawn to make friends
4 - Other children seem to like
5 - Participates in class activities
6 - Plays by himself most of the time
7 - Gets into lots of arguments or fights with other children
8 - Has lots of friends

Table 16

Correlations of Observation Data with Sociometric Criteria for Low, Middle, and High Status Group Students (N=58)

Sociometric Observation/Criterion	Status Group[a]			Planned Comparisons[b]	
	L	M	H	L v (M+H)	MvH
Peer Talks to Target					
Roster Ratings	-.78	.05	.50	.002	.11
Peer Nominations	-.71	.23	.59	.000	.21
Teacher Questionnaire	-.71	.05	.57	.002	.09
Different Peers to Target					
Roster Ratings	-.40	.04	.19	.15	.66
Peer Nominations	-.33	-.03	.48	.04	.12
Teacher Questionnaire	-.40	-.07	.55	.06	.05

[a] Status groups were L = low (≤.70 sd below mean), M = middle (between .70 below mean and .70 above mean), H = high (≤ .70 sd above mean).

[b] Numbers represent p values.

APPENDIX A

Student Roster and Rating Measure

Practice Procedure

The child was presented with a roster and rating form without names on which a series of five faces was printed. Faces ranged from a "frown" face to a "happy" face, corresponding to the numbers 1-5 printed underneath the faces.

Instructions. "here is a series of five numbers with faces underneath them. I am going to ask you some questions about how much you like to do some things, and I want you to answer me by telling me a number. Number 1 means you don't like to - see the frown face? Number 3 means it's okay. Number 5 means you like to a lot - see the smile face? Number 2 means you feel in between not liking to and feeling okay. Number 4 means you feel in between okay and liking to a lot. Can you think of something you like to do a lot?" (Child gives response). "Okay, which number would that be?" (Child gives response. If response is correct, investigator responds with "Good," and instructs child to circle that number. If response is incorrect, the concept of the scale is discussed as necessary.)

The subject was then asked to think of two things he "feels okay about" and "dislikes." Following this, the child was given practice questions and asked to circle the appropriate number.

"How much do you like to eat ice cream?"

"How much do you like to go to bed early?"

"How much do you like to play outside?"

(Queries were continued until child seemed able to grasp the concept.)

Roster and Rating Scale and Nominations

The subject was then presented with a alphabetical list of his classmates, with the numbers 1-5 printed next to each name.

Instructions. "I'm going to give you a list of other kids in your class. Next to each name are the numbers 1-5 (point to first set). I want you to circle the number that best describes how much you like to 'play with' this person at school. No one else will know what your answers are. No one else will see this sheet. If you don't like to very much, circle #1, if you feel okay (in between), circle #3, if you like to a lot, circle #5. If you feel somewhere between not liking to to a lot and okay, circle #4."

When the child had completed the "play with" page, he or she was asked to "circle the names of the people you like to play with the most," and then "underline the names of three people you like to play with the most." These provide the positive peer nominations data for "play."

The subject was then provided with "work with" rating scales. This and the positive peer nominations were completed in the same manner as the "play with" form.

APPENDIX B

Teacher-Completed Measures: Roster and Rating Scale and Social Status Rating Scale

Roster and Rating Scale

Instructions

"We are trying to get a measure of social acceptance on each child in your class. We would like you to complete a rating scale similar to the one we will be asking each child to complete. Here are two lists of the children in your class. After each name is a scale ranging from 1-5. On this page (point to 'plays with') we would like you to rate each child on the 1-5 scale in terms of how much you think other children like to play with that child. When you have completed that, we would like to take this sheet (indicate 'works with' page) and rate each child on the 1-5 scale in terms of how much you think other children like to work with this child. Number 1 corresponds with 'Not very much' and number 5 with 'Very much' Number 3 is neutral."

Social Status Rating Scale

Instructions

"We would also like you to fill out the rating sheet on the children in your class. We have a list of the students in your class (indicate) and a series of statements. We would like to know how well each of these statements describes each of your students. Please rate each student on a 1-5 scale. A rating of 1 means the statement does not describe the student at all, 5 indicates it describes him/her very well. A rating of 3 is a neutral rating, it describes him/her neither well nor poorly.

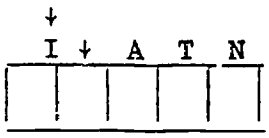
APPENDIX C

Definitions of Target Behaviors and Observation Recording Forms

Criteria for Behavior Categories

INITIATIONS

A behavior is recorded as an initiation if it is an intentional physical approach to the target and/or a verbal or non-verbal action directed toward the target,



An initiation will be tallied when there is no interaction with the target at least five seconds prior to the approach and/or talks to by peers or teacher. The initials of the peer initiating are written in the "I" box. Do not tally target initiations to teacher or peers.

Examples. Tally an initiation if peer or teacher:

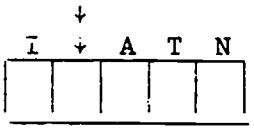
1) Walks toward target or approaches intentionally (e.g., to greet, touch, talk to, give an object, question, share material, makes eye contact.

2) Calls to or verbalizes to target ("Hey, John." "Come and play." "How do I do this problem?" "Loan me your eraser." "What do you think of Monet?") Neither approach nor proximity is required for "talks to." Peer or "T" may be seated next to, working together, call from a distance, etc.

If, as an observation interval begins, the Observer is unsure whether or not a 5 second interval has preceded the interaction, code as interaction (↓), not initiation.

INTERACTIONS

An interaction is defined as verbal exchange between Target and Peer or Teacher.



An interaction can be coded as either a two-way or one-way interaction. Coding verbal behavior as a two-way interaction requires both the target and peer to be talking to each other within the same interval. The peer's verbalization cannot be an initiation to code this exchange as a "two way." A one-way interaction may be either a peer to target or target to peer verbalization. If a two-way interaction occurs, the + is circled and the initials of the peer with whom this occurred are entered in the second box.

A one-way peer to target interaction is coded by writing the initials of the peer in the box and circling them. A one-way target to peer interaction is coded by writing the initials of the peer to whom the target spoke in the box.

Examples: Tally one interaction if peer or teacher:

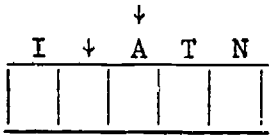
1) Is talking to target when 6 second interval begins.
2) Is talking to target and observer cannot determine who initiated the conversation.
3) Talks to target and less than 5 seconds has elapsed since last interaction.
4) Makes verbal response to initiation by target.

If unsure whether the verbalization between target and peer or teacher is an initiation or not, record it as an interaction.

Laughter in response to interaction is to be coded as an interaction.

AVERSIVE BEHAVIOR

Aversive behavior is defined as any instance of interference, derogation, and/or attack between target and peer.



A "A" should be placed in this box if aversive behavior is directed towards target by peer.

A "T" should be marked for any instance where the target directs this behavior towards a peer.

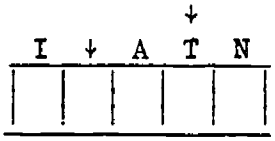
Examples: Tally aversive behavior if:

Target or Peer hits, insults ("your mother eats doggie yum-yums"), pushes, rejects (an abrupt move away from an approaching child), verbally abuses ("I don't like you"), interferes with work or play of others.

Observers should mark only clear instances of the above behavior. Since often the behaviors are meant to be friendly (e.g., joking, friendly punching, rough play), observers should mark this individual depending on the reaction of the person or persons to which the behavior was directed. If the reaction is one of anger, hurt, fear, etc., or if the behavior was ignored, place the appropriate symbol in the box for aversive behavior.

IGNORES

Ignores is defined as the absence of any response to a verbal or physical initiation or interaction.



Place a "P" in the box if the peer ignores a verbal or physical initiation orientation by the target. Place a "T" if the target ignores a peer initiation or interaction.

An "Ignores" should be marked for any failure to respond to questions, requests, approaches, or other physical or verbal requests for attention (may be initiation or interaction).

Mark "ignores" if no response to such requests occurs within the 30 second observation interval. An "ignores" must be marked if there is no response within the 30 second interval even though a response may occur outside the interval.

Examples: "Hey, John, come here." - By target peer - no response or acknowledgment.

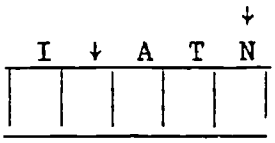
An "ignores" is marked if there is no compliance with the request, e.g., "Hey, John, come here." Peer - looks but does not come, is an "ignores." If, however, the peer looks, and says "No," do not mark "ignores."

If a request for attention occurs in the first six-second interval and a response to the request occurs in the third six-second interval, do not mark "ignore" box. If an interaction or initiation occurs in the last six-second interval, continue to observe for an additional six seconds. If a response occurs more than six seconds <u>after</u> the last six-second interval, place the appropriate mark in the "ignores" box for the interval in which the request occurred. If the response occurs in the extra six-second interval, do not record "ignores."

<u>Examples</u>: If the request (initiation) occurs here (2nd set) and a response occurs here (4th set), do not mark "ignores." If a request occurs here (5th set) and a response occurs more than six seconds after the end of the interval, mark "ignores" in the interval in which the request was made. In this case the mark would be placed here (5th set - "T").

A response of any kind, whether positive or negative, still qualifies as a response. An "ignores" should be marked only when no response occurs.

INAPPROPRIATE



The "inappropriate" box represents an evaluation of the target's behavior during the interval of observation. When the timer indicates the interval has ended, the observer will tally inside the box, if, in the observer's opinion, the child behaved inappropriately given the current circumstances during the interval. This is purely a subjective judgment and does not mean, for instance, that aggressive behavior will qualify, if, in the observer's opinion, the aggression was contextually appropriate.

Examples: Bizarre, awkward, uncoordinated behavior would qualify. Non-contingent, out of place verbalizations would qualify. Smiles to no one or in response to no one may qualify.

APPENDIX D

Definitions of Target Behaviors, Instructions, and Recording Forms for Anologue Structured Situation

Definitions of Behavior

1. Talks to:

   Verbal address. To code a "talks to," address must be accompanied by head orientation to peer by target or from peer to target. If target is talking to group or observer is unable to determine to whom address is directed, a group talks is recorded.

2. Aversive behavior

   To code aversive behavior, peer must direct one of the following behaviors to the target: verbally derogation or attack, or physical attack (hits, shoves, etc.)

3. Ignoring behavior

   To code ignoring behavior, peer must fail to respond to a verbal or physical initiation or interaction (e.g., failure to respond to questions, requests, or other physical or verbal requests for attention).

Instructions for coding

Observers will code each child's behavior in the small group for a 10-second interval.

Arrows from one circle to another ( ) indicate "talks to" (head orientation and verbal address). If the child talks to no one in particular, code 'T' ( ) Tally inside circle for aversive behavior, outside circle for inappropriate behavior. A 'T' inside circle indicates ignoral (thur, indicates talks to was ignored).

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