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Peer Tutoring: Integrating Academic and Social Skills Remediation in the Classroom.

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Rehearsal (Learning)

The study explored the effectiveness of social skills training and cross-age tutoring on the acquisition and use of social skills among 20 mainstreamed learning disabled boys (ages 9-12). All subjects received direct instruction in such communication skills as greeting, listening, asking questions, answering questions, and complimenting. Seven of the students then tutored younger children in spelling. Emphasis was placed on the use of appropriate social communication skills in the tutoring situation providing an opportunity for active rehearsal of the target social skills. Evaluation indicated that experimental subjects responded to the intervention for two of the target behaviors (greeting and answering questions). Three figures, 7 tables, and 52 references are included. (DB)
PEER TUTORING: INTEGRATING ACADEMIC AND SOCIAL SKILLS

REMEDIATION IN THE CLASSROOM

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Since the inception of PL 94-142 and the wider use of mainstreaming in special education programming, professionals have increased their awareness of the social deficits of learning disabled (LD) individuals. Mildly handicapped children have had difficulty making the social-behavioral adjustments which are demanded in the regular classroom by teachers and peers.

Numerous sociometric studies of the peer acceptance of mainstreamed elementary school children have been conducted. Results indicate that LD children are less accepted and more overtly rejected than their nonlearning disabled peers (NLD) (Bruninks, 1978; Gresham, 1986; Scranton & Rykman, 1979). Additional studies have indicated that the social rejection of LD children is not limited to peers, but also includes rejection by parents and teachers (Bryan, 1983). The results of other studies demonstrate that LD students have negative verbal interactions with their classmates (Bryan, 1974a) and present general behavior problems (Cullinan, Epstein, & Lloyd, 1981; Sutherland, Algozzine, Ysseldyke, & Freeman, 1983). Thus, it appears that academic skill deficits are not
the only important characteristics of learning disabilities and lack of academic achievement not the only concern for remediation.

Various approaches to training LD children in the use of social skills have been employed. Some techniques have been successful in treatment settings, but have not generalized to the natural setting.

Participation as a peer tutor in a social skills training program may help LD children understand the utility of using prosocial behavior. Tutoring may be considered as an active rehearsal or guided practice of the training.

The social skills training strategy used in this study incorporated direct instruction of target behaviors and the cross-age tutoring model. Positive effects were demonstrated on some of the target behaviors.

THE IMPORTANCE OF SOCIAL COMPETENCE

Marcus and Leiserson (1978) believe that there are several advantages to encouraging social competence in children. The child who behaves prosocially may develop social motivation -- learning to value the welfare of others and feeling competent to give assistance. Conversely, children who have not had the opportunity to have cooperative and effective social interaction may become less active social agents. This may lead to difficulties in
forming and maintaining friendships. Previously, emphasis in remediation was limited to academic and self-help skills, but the results of studies on behavioral problems have had an influence on the remedial goals of special educators for the LD population.

It is widely assumed that peer status is related to an individual's level of social competence. Correlational studies in social competence indicate that early problems in peer group status can affect psycho-social development in later life. Adolescent delinquency (Keilitz & Dunivant, 1986), dropping out of school (Hartup, 1970), "bad conduct" discharges from military service (Roff, 1961), and mental health problems (Cowen, Pederson, Babigian, Izzo & Trost, 1973) have all been related to difficulties in early peer relations. Similarly, high social status in childhood has been related to academic achievement (Cobb, 1982) and interpersonal adjustment in later life (Barclay, 1966). As the literature indicates, the development of social skills is important, as peer interactions and social skills may be relevant to the acquisition of normal labels and roles in adult life (Greenspan, 1981).

**Significance of the Problem**

The use of prosocial behaviors may contribute to social adjustment and influence the level of satisfaction in
interpersonal relationships. Teachers and parents report that social skills and emotional stability are more likely to lead to success in school than are IQ and academic achievement scores (Richards & McCandless 1972). It was assumed by PL 94-142 that handicapped children would be able to adapt to the regular class setting by modeling the behavior of their non-handicapped peers (Gresham, 1981; Gottlieb, 1979). Studies on the effects of mainstreaming have demonstrated, however, that LD children are likely to have fewer social skills than NLD children and are less accepted by them. Many LD children have trouble complying with the social demands of the mainstreamed setting and have problems interacting with teachers and peers (Bryan, 1974a; Bruininks, 1978; Garret and Crump, 1980; LaGreca & Meisbov, 1978). If positive and negative social behavior tends to be reciprocal (Staub, 1975), it may be possible that LD children are at even greater risk for problems in psychosocial development than their NLD peers. Learning disabled children who have poor peer relationships may benefit from social skills training.

A Model of Social Competence

A core group of theoretical models of social competence have emerged from this literature over the last decade. The models range from the behavioral approach (Foster & Richey,
1979), to the more recent consideration of perception and social interaction (Kronick, 1981), communication (Rinn & Markle, 1981), peer group status (Bryan, 1978), and cognitive behavior modification (Gresham, 1981). Inasmuch as the definition and theory influence the "what" and the "how" of social skills assessment and training, it is important to understand the orientation, and underlying values implied by various intervention programs. Some programs are narrow, others are overinclusive; no one accommodates all needs.

Many researchers include social skills in the theoretical hierarchy of social competence (Greenspan, 1981; Wine & Smye, 1981). Social skills as defined for the purpose of this study interface with the concept of social competence. Social competence is viewed as the result of social responses and skills that: a) enable the child to initiate and sustain positive relations with others; b) foster peer acceptance and successful classroom adjustment; and c) enable the child to cope with and adapt to the social environment. This definition is compatible with the communication model of social competence (Rinn & Markle, 1981). According to the communication model, verbal and nonverbal responses guide the interpersonal performance of individuals, affecting other individuals and the environment by obtaining, removing, or avoiding undesirable outcomes. These skills, may include: a) joining in social activity; b)
initiating and maintaining conversation; c) perceiving the social situation regarding the appropriateness of topics, times and length of conversation; and d) showing empathy for others.

REVIEW OF THE LITERATURE

Sociometric and behavioral observations of LD children's peer interactions have established that LD children have lower social status than their nondisabled peers. While these studies have provided general information about LD children's social interaction they have not addressed the possible cause(s) of low social status. Recently, researchers have considered some of the qualitative aspects of LD children's social behavior. Analyses of the components of social behaviors may help to identify the reasons why LD children are less liked by their teachers and peers (i.e., verbal communication, social perception, self-concept, and role-taking). Since the social communication model was employed in this study, the verbal communications of LD children were of interest.

Communication skills of LD children. Research indicates that the communication skills of LD children are less developed than those of their NLD peers. Children who ask for help, receive it, and children who make rejecting and competitive statements elicit competition. Negative
social behaviors, including noncompliance and interference, are related to rejection by others (Hartup, Glazer, & Charlesworth, 1967). Learning disabled subjects were observed to make more competitive statements while NLD children showed more consideration in their conversation (Pearl, Bryan, & Donahue 1983). It may be possible that the competitive statements made by LD children contribute to their low social status.

Learning disabled children not only make more negative statements but they also have difficulties initiating, maintaining, and controlling a conversation (Bryan, Donahue, Pearl & Storm, 1981). When using verbal communication to problem-solve, LD children provide low levels of information and have difficulty obtaining information by asking questions (Spekman, 1981). It appears that the communication skills of LD boys may differ from those of LD girls. More simple language is used by LD boys regardless of the age and ability of their audience while adjustments in the levels of complexity of language are made by LD girls. Overall, the language of LD children is less flexible (Bryan & Pflaum, 1978; Soenksen, Flagg, & Schmits, 1981). Using direct observations in the classroom setting, Moore and Simpson (1983) assessed the interaction patterns of mildly handicapped and nonhandicapped children. They indicated that the behaviors of LD and behaviorally disordered (BD)
Both LD and BD subjects were different than nonhandicapped subjects in that they engaged in more negative verbalizations, and while all groups made disruptive statements, the nonhandicapped students made the fewest.

The primary emphasis of the current curriculum is in instruction of academic skills, and the remediation of academic skill deficits has been the major goal of learning disabilities specialists. Although social skills training is not typically included in the regular curriculum the instruction of social communication skills may improve the social interactions of LD children. In view of the evidence regarding the impact of social competence on the acquisition of normal roles in adult life, social skills training is, in this author's view, of paramount importance. The following sections will discuss social skills training of the LD population and the use of peer tutoring as a way to generalize social skill training within the context of the classroom.

Current Practice

In an attempt to respond to the findings of social competence studies that indicate early problems in peer status can negatively affect the psycho-social development of the individual later in life, researchers and practitioners have designed social skill training programs
for the LD population. These programs are aimed at improving social competence and social interactions. In keeping with the social communication model, target behaviors for the LD population include greeting peers, initiating conversations, joining groups, and responding to questions. Cues involving eye contact, appropriate physical contact, and verbal praise are provided. The training components of the communication model described in the literature include a combination of coaching, behavioral rehearsal, modeling and feedback.

Although some research has indicated an improvement in the quality and frequency of social interaction in the treatment setting, as a result of social skills training these changes often are not maintained in the natural setting (Van Hasselt, Hersen, & Whitehall, 1978). Social skills training, therefore, may not generalize and may not be effective in altering social behavior or peer status in natural settings. Researchers should probably concern themselves with the issue of generalization of social skills training before incorporating it into the already overtaxed curriculum (Berler, Gross, & Drabman, 1982). Some issues surrounding the problems of generalization are the context of social skills training, motivation of the student to learn and use social skills, and the students' understanding of the importance of social skills.
To date, social skills training has been conducted in experimental settings using social simulations, role-playing, and prompts given by the training staff. These settings may not be appropriate for the acquisition of social skills. A normal context of interaction, defined as the classroom for children may be more conducive to the effective teaching and application of social skills (Greenspan, 1981; Cartledge & Milburn, 1978). It is in this context that children may best learn the expectations held by peers about appropriate social behavior and the consequences resulting from their social actions. Children with social skills deficits should be instructed about appropriate social behavior in the setting where they will use that behavior and with the individuals with whom they will be interacting. Research has indicated that social competence is dependent upon the reinforcers received from significant others (Asher, Oden & Gottman, 1977; Asher, Singelton, Tinsley, & Hymel, 1979). Reinforcers received for appropriate social skills may be stronger if they are received from peers.

Motivation to demonstrate socially skilled behavior may be enhanced if children can understand the application and consequences of their actions. It is accepted that children learn academic skills better when the concept is clearly defined and they are given positive and negative
examples and relevant applications of the task (Engelmann, 1982). It seems logical that the same methodology should be employed with the teaching of social skills.

Limiting social skills training to the treatment setting is not an effective teaching strategy. Social skills should be taught in a relevant context. Different social skills are required for different situations.

Given present understanding of the problem solving strategies of the learning disabled it is unreasonable to expect an LD child to adapt social skills to meet different occasions without providing direct instruction and guided practice of this skill.

PURPOSE OF THE STUDY

One approach that may facilitate children's understanding of the importance of social skills, enhance their motivation to learn and use these skills, and promote generalization of social skills training is peer tutoring. Peer tutoring is operationally defined as the use of children (same-age or cross-age) as tutors of other children (Allen, 1976).

Major reviews of the tutoring literature have not typically included research on handicapped populations. Some relevant studies include those by Cloward (1976) who states that intelligence and achievement are not necessarily prerequisites to successful tutoring, and...
Osguthorpe & Scruggs (1986), among others, who illustrate that handicapped individuals can, indeed, function successfully as tutors (Mellberg, 1980; Strain 1981). It is agreed, therefore, that tutoring provides a conceptually sound basis for the instruction of handicapped and nonhandicapped students.

While handicapped children have been tutored in a variety of subjects and settings, rarely have they been assigned the role of tutor. The assumption has been made in the past that handicapped populations would not serve effectively in this capacity. There is no reason, however, why members of the handicapped population cannot serve as tutors, as long as they have some competence in the topic and are assigned to instruct a younger tutee. Allen's (1976) work supports the cross-age tutoring model as beneficial to students. "In learning by teaching, the child who is teaching finds a meaningful use for the subject,... a utility for his knowledge" (Gartner, Kohler, & Reissman, 1971, p.60). In the past, tutoring applications have been used to enhance academic performance and modify the behavior of a variety of populations. Tutoring studies indicate that tutors learn as much or more than their tutees.

Kazdin, Matson and Estveldt-Dawson (1984) have found that analogue evaluation of social skills does not necessarily correlate highly with skills used in real-life
situations. The use of LD students as tutors in an academic context may reinforce the social skills that have been taught to them. Having a practical application for their knowledge may motivate LD children to understand the importance of appropriate social communication and to utilize these skills. Children who talk with peers about their schoolwork are more likely to learn their lessons (Cobb, 1982). Social competence may also be fostered through the use of prosocial behavior while interacting with peers during peer tutoring.

The purpose of this study was to explore the effectiveness of social skills training and cross-age tutoring on the acquisition and use of social skills among LD boys. Learning disabled students reviewed direct instruction formats containing the elements of appropriate communication skills. Target behaviors included greeting, listening, asking questions, answering questions and complimenting. Although the students tutored in spelling, emphasis was placed on the use of appropriate social communication skills in order to assist their peers. The study, therefore, involved those components that have been identified as important in social skills training: a) the tutoring intervention involved a classroom project; b) LD students had the opportunity to apply their training through active rehearsal of the target skills in the natural
(classroom) setting; and c) LD tutors had the opportunity to receive reinforcers from their peers. The incorporation of the component of active rehearsal (tutoring) made the study distinctly different than other studies of social skills training and the LD population.

METHODOLOGY

The Sample. A total of 20 boys, in the fourth, fifth, and sixth grades participated in this study. The children attended schools within 25 miles of Madison, Wisconsin and came from predominantly white, middle class communities. All of the children were placed in LD resource rooms, but participated in classes with nonhandicapped children for 50% of their class schedule. The subjects were identified as having social skills deficits by their LD teachers. The subjects had a mean chronological age of 11.2 years (range = 9.3 to 12.7), and fell within the average range of intelligence as measured by the WISC-R (M = 93.9, SD = 9.11). The mean pretest spelling score as measured by the Test of Written Spelling (TWS) (Hammill & Larsen, 1976) was 20.4 (SD = 8.32). Teacher ratings of social behavior were evaluated by the Walker Problem Identification Checklist (WPBIC) (Walker, 1982 (M = 24.35, SD = 19.08). The Kruskal-Wallis or H test was performed on the pretest for the dependent measures for each group to obtain
<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental n=7</th>
<th></th>
<th>Comparison n=7</th>
<th></th>
<th>Control n=6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Range</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Age</td>
<td>11.285</td>
<td>1.133</td>
<td>12.7-9.4</td>
<td>10.905</td>
<td>.997</td>
</tr>
<tr>
<td>WISC-R</td>
<td>94.142</td>
<td>5.956</td>
<td>101-85</td>
<td>92.571</td>
<td>6.940</td>
</tr>
<tr>
<td>WPHTC post</td>
<td>11.000</td>
<td>11.064</td>
<td>12-0</td>
<td>18.714</td>
<td>20.790</td>
</tr>
</tbody>
</table>

N=20
information regarding the parity of subjects at the onset of the study. No significant differences were detected between the groups. (See Table I for information regarding the sample.)

**Subject Assignment.** Subjects were assigned randomly to participate in the experimental (n=7), comparison (n=7) or control group (n=6). Experimental and comparison subjects received direct instruction in five target social communication skills: a) greeting, b) asking questions, c) answering questions, d) listening, and e) complimenting.

Social skills training was conducted for seven consecutive days following the pretest. Children in the experimental and comparison groups met together for approximately 30 minutes each day. Training of the five target social skills was conducted according to direct instruction teaching procedures (Engelmann & Carnine, 1982; Carnine and Silbert, 1979). The five target skills were presented individually, over the course of seven consecutive school days, through structured vocabulary formats which clearly defined the meaning of each of the target skills. Each target social skill was presented individually. The direct instruction sequence was standardized across all five target skills and included the following elements: definition of the target skill, presentation of positive and negative examples, asking questions regarding examples,
discussion, review, and role-play.

Experimental subjects tutored NLD second graders in spelling after the completion of social skills training. Cross-age tutoring was considered to be active rehearsal of the five target behaviors. Comparison subjects worked with an LD peer on regular spelling assignments, while control subjects participated in teacher-taught language arts lessons. All subjects worked for approximately 20-minute periods, three times per week for four weeks.

**Instrumentation and Data Collection.** Pre and posttest scores were collected on two standardized dependent measures (TWS and WPBIC). A comparison of differences on the medians between the three groups on the pre- and posttest scores of each test was used to measure change in the subjects after the intervention. The third dependent measure consisted of repeated direct observations of the target behaviors which were made by trained observers who were blind to the purpose of the study. Repeated observations were made at three points during the study: prior to the training, post training, and post tutoring. The ratings of the appropriateness of subjects' use of the target behaviors was evaluated by deriving weights through a linear transformation of the data consistently across groups. These weights were then applied to the subjects' actual behavior, thus converting the data to the ordinal scale (Festinger,
Analysis of the Data. Nonparametric statistics were used in this study because the sample sizes were small, homogeneity of variances was questionable, and the medians seemed to be more reliable than the means (See Marascuilo & McSweeney, 1977, p. 263). Three research questions were included in the study which utilized comparisons of three groups. In order to avoid splitting the Type I error rate, each of the three questions was treated as a separate study. Differences on pre- and posttest scores for each question were compared pairwise between all three groups. Alpha, the significance level, was set at .05. The Kruskal-Wallis test was used to determine whether differences existed between one or more of the groups on each of the dependent measures.

RESULTS

The first hypothesis investigated the differences on pre- and posttest scores on the TWS (Larsen & Hammill, 1976) between subjects who received social skills and cross-age tutoring and those who did not. Differences were detected between the experimental and comparison groups on the TWS, $x^2 = 6.012$. ($x^2$ significant at 5.99, $p < .05$, see Table 2). The second hypothesis compared differences in teacher ratings of LD subjects' social behavior as measured by the WPBIC
Hypothesis II - Results of Hypothesis Investigating Differences on the Test of Written Spelling

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Statistical Test</th>
<th>Median Ranks</th>
<th>Test Statistic</th>
<th>Probability of Occurrence</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>7</td>
<td>Kruskal-Wallis</td>
<td>6.43</td>
<td>$x^2 = 6.0122$</td>
<td>.0495</td>
<td>reject the null hypothesis</td>
</tr>
<tr>
<td>Comparison</td>
<td>7</td>
<td></td>
<td>14.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>6</td>
<td></td>
<td>11.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$x^2$ significant at 5.99, $x \leq 0.05$, df = 2

The mean of the median ranks represents the average of combined scores.
(Walker, 1982). No differences were found between the experimental, comparison, and control groups on the Walker.

The third area of interest included hypotheses regarding the use of social skills after social skills training and cross-age tutoring. Hypotheses three through seven were addressed through a set of analyses which were conducted to examine differences in the frequency of occurrence of the five target behaviors between the three groups of LD subjects (i.e., greeting, asking questions, answering question, listening and complimenting). Statistical differences were detected on two of the behaviors (greeting, answering questions) and gains were noted in the use of complimenting.

Significant differences were found on the frequency of occurrence of appropriate greeting, \( X^2 = 10.241 \). Supplemental analysis using the Mann-Whitney U Test indicated that differences existed between experimental and comparison subjects (\( p = 0.0037 \)), and experimental and control subjects (\( p = 0.0117 \)). Changes in use of greeting skills occurred after the social skills training and pre-to-posttest comparisons. (See Tables 3, 4, and Figure 1, for further information.)
Figure 1

Frequency of Occurrence of Greeting Behavior
### Table 3

Hypothesis 13 - Results of Hypothesis Investigating Differences on the Frequency of Occurrence of Greeting Behavior

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Statistical Test</th>
<th>Median Ranks</th>
<th>Test Statistic</th>
<th>Probability of Occurrence</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>7</td>
<td>Kruskal-Wallis</td>
<td>4.79</td>
<td>$x^2 = 10.241$</td>
<td>.0060</td>
<td>reject the null hypothesis</td>
</tr>
<tr>
<td>Comparison</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>6</td>
<td></td>
<td>13.75</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$x^2$ significant at 5.99  \(\times p < .05\)  \(\text{df} = 2\)
Table 4

Hypothesis #3 - Supplemental Analysis of Differences Between Groups on the Frequency of Greeting Behavior

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Test Performed</th>
<th>Test Statistic</th>
<th>Exact Probability of Occurrence</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental vs.</td>
<td>7</td>
<td>Mann-Whitney</td>
<td>Z = -2.9038</td>
<td>.0037</td>
<td>reject the null hypothesis</td>
</tr>
<tr>
<td>Comparison</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental vs.</td>
<td>7</td>
<td></td>
<td>Z = -2.5034</td>
<td>.0123</td>
<td>reject the null hypothesis</td>
</tr>
<tr>
<td>Control</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparison vs.</td>
<td>7</td>
<td></td>
<td>Z = -2.918</td>
<td>.7704</td>
<td>null not rejected</td>
</tr>
<tr>
<td>Control</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

alpha = .016
The $x^2$ (8.0939) was significant for answering questions; therefore, the alternative hypothesis, that differences existed in the frequency of answering questions between experimental and other subjects, was accepted. (See Table 5, 6, and Figure 2, for further information.)

As can be seen in Figure 3, complimenting is not a frequently occurring prosocial behavior. Analysis of the data indicated increases in the use of the behavior by the experimental group as the study progressed, providing clinical support for the use of this intervention (see Table 7).

**Within-group Differences.** The primary research question investigated the effects of the intervention between the three groups participating in the study. The effectiveness of social skills training and cross-age tutoring was also ascertained by examining the changes in performance within the members of each of the three groups. Within-group differences attested to the clinical significance of the intervention.

The Matched Pair Wilcoxin test, the nonparametric analogue to the within-subjects t-test was used to analyze the pre/post observations of each subject. Results of the analysis of dependent measures of experimental subjects
Figure 2

Frequency of Occurrence of Answering Questions
Table 5

Hypothesis #5 - Results of Hypothesis Investigating Differences on the Frequency of Occurrence of Answering Questions

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Statistical Test</th>
<th>X Median Ranks</th>
<th>Test Statistic</th>
<th>Probability of Occurrence</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>7</td>
<td>Kruskal-Wallis</td>
<td>6.07</td>
<td>x² = 8.093</td>
<td>.0175</td>
<td>reject the null hypothesis</td>
</tr>
<tr>
<td>Comparison</td>
<td>7</td>
<td></td>
<td>10.71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>6</td>
<td></td>
<td>15.42</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

x² significant at 5.99, p < .05, df = 2
<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Test Performed</th>
<th>Test Statistic</th>
<th>Exact Probability of Occurrence</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental vs.</td>
<td>7</td>
<td>Mann-Whitney U</td>
<td>$z = -1.7288$</td>
<td>.0839</td>
<td>null not rejected</td>
</tr>
<tr>
<td>Comparison</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental vs.</td>
<td>7</td>
<td></td>
<td>$z = -2.5034$</td>
<td>.0123</td>
<td>reject the null hypothesis</td>
</tr>
<tr>
<td>Control</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparison vs.</td>
<td>7</td>
<td></td>
<td>$z = -1.714$</td>
<td>.0865</td>
<td>null not rejected</td>
</tr>
<tr>
<td>Control</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

alpha = .016
yielded significant within-group differences of three measures: TWS, greeting and answering questions. No significant within group differences were detected for either comparison or control subjects.

SUMMARY

The purpose of the study was to explore the effectiveness of social skills training and cross-age tutoring on the acquisition and use of social skills in the classroom setting. The subjects were 20 mainstreamed, LD boys participating in LD resource rooms in three different school districts. The boys were identified by their teachers as having social skills deficits.

Social skills training included the presentation of direct instruction formats for each of five target behaviors (greeting, asking questions, answering questions, complimenting and listening) included in the study. Upon completion of the social skills training, experimental subjects tutored nonhandicapped second-graders in spelling. Cross-age tutoring was considered to be active rehearsal of social skills training. The effectiveness of the intervention on social behaviors, teacher ratings, and spelling achievement were evaluated.
Figure 3

Frequency of Occurrence of Complimenting Behavior
<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Statistical Test</th>
<th>$\bar{X}$</th>
<th>Median Ranks</th>
<th>Test Statistic</th>
<th>Probability of Occurrence</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>7</td>
<td>Kruskal-Wallis</td>
<td>6.93</td>
<td>11.17</td>
<td>$x^2 = 5.672$</td>
<td>.0586</td>
<td>do not reject the null hypothesis</td>
</tr>
<tr>
<td>Control</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Comparison</td>
<td>7</td>
<td></td>
<td>13.50</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

$x^2$ significant at 5.99  \hspace{1cm}  p < .05 \hspace{1cm}  df = 2
The design used in this study was a pre post design which incorporated repeated measures of the direct observations. Spelling and teacher ratings were evaluated by the pre post administration of standardized tests (i.e., TWS & WPBIC). Frequencies of the target behaviors were tallied before and after social skills training to assess its effects on the use of social skills by the experimental and comparison subjects. Observations were again conducted upon completion of cross-age tutoring.

The data were analyzed using the Kruskal-Wallis test (a nonparametric analogue to the Analysis of Variance). Supplemental analyses of significant findings were investigated by the Mann-Whitney U test.

Statistically significant results demonstrated that experimental subjects responded to the intervention for two of the target behaviors (greeting, and answering questions). It was evident through the analysis of test scores and tallies of direct observations on the other dependent measures, that the intervention resulted in positive gains.

Consistent with the opinion of previous researchers it is concluded that cross-age tutoring can be a powerful treatment for some LD children. The strategy employed in this study, of incorporating social skills training and cross-age tutoring is potentially more effective for promoting generalization of social skills because it
utilized direct instruction of the target skills and active rehearsal of social skills vis-a-vis the tutoring model. There are several implications for future research including the effects of the treatment on sociometric status, self-esteem, motivation, and self-monitoring.
REFERENCES


Rhinehart & Winston.
Educational Research, 51, 139-176.


