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Impact of Peer Teaching on the Acquisition of Social Skills by Adolescents with Learning Disabilities

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Abstract

The purpose of the study was to examine the impact of peer teaching on social skills acquisition of adolescents with learning disabilities. A special education teacher taught 12 students with learning disabilities three social skills, *giving positive feedback, contributing to discussion,* and *accepting negative feedback.* A random sample of five students previously taught by the teacher then instructed five other students with learning disabilities. Results indicated that both groups, the students taught by their teachers and those taught by their peers, improved in all three social skills. Both groups made less improvement in *accepting negative feedback.* The authors' conclude that social skill instruction taught by peers may be as effective and more efficient than when taught solely by teachers.

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Adolescents with learning disabilities (LD) often lack adequate social skills for sustaining social relationships (Gresham, 1981; West, 1985). They often experience low social status among their peers without disabilities; low participation rates in school-related and out-of-school activities; dissatisfaction with their social lives; fewer friendships; and more loneliness, rejection, and isolation in school than their counterparts without disabilities (Conderman, 1995; Gresham & Elliot, 1989; Sabornie & Beard, 1990; Schumaker & Ellis, 1982; Swanson & Malone, 1992; Vaughn, 1985).

Research indicates, for example, that the rate of social interaction of adolescents with LD is similar to that of their peers without disabilities. Schumaker, Sheldon-Wildgen, and Sherman (1982b) discovered little to no differences between students with and without LD in terms of the

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number of times students spoke to peers, length of their conversations with peers, and the average number of peers to whom the students spoke. In a second study, however, the quality of the social interactions between students with and without LD differed. Quality was measured using role-play situations. Adolescent students with LD performed significantly fewer verbal and non-verbal skill steps of the eight social skills examined (i.e., *accepting negative feedback, following instructions, giving negative feedback, giving positive feedback, negotiating, conversing, problem solving,* and *resisting peer pressure)* (Schumaker, Hazel, Sherman, & Sheldon-Wildgen, 1982a). Although not all students with LD demonstrate deficits in social skills, the social deficits of some students with LD are evident and often appear to impact negatively on their adult lives (Alley, Deshler, Clark, Schumaker, & Warner, 1983).

Based on these and other data, social skills training is advocated as a means of addressing social skill deficits of adolescents with learning disabilities (e.g., Gresham & Reschly, 1986; Margalit, 1995; Vaughn, 1985), those with disabilities in general (e.g., Walker, Schwarz, Nippold, Irvin, & Noell, 1994) and, in fact, all students (e.g., Sugai & Lewis, 1996).

Systematic, direct instruction has been documented as an effective method for teaching students with LD academic skills (e.g., Gleason, 1995; Kuder, 1991). Researchers have also demonstrated that the social skills of adolescents with LD can be improved through systematic and direct instruction (Hazel, Schumaker, Sherman, Sheldon-Wildgen, 1981 a; Keefe, 1988; Vaughn, 1985). In fact, the instructional approach often found in commercial social skills training programs relies on teacher-directed instruction and follows the basic model-lead-test format (Sugai & Lewis, 1996). Specific commercial social skill programs, for example, incorporate modeling, role-playing, behavioral rehearsal, reinforcement, and feedback (e.g., Goldstein, Sprafkin, Gershaw, & Klein, 1981; Hazel, Schumaker, Sheldon, Sheldon-Wildgen, 1981b; Schumaker, Hazel, & Pederson, 1989).

Many of the social skills curricula for adolescents have been developed and field tested in clinical situations (e.g., juvenile court settings) or in special education classrooms that involve small teacher-to-student ratios for learning the social skills. Although most commercial social skills training programs rely on teacher-directed instruction, many teachers do not have the luxury of teaching in a small teacher-student ratio setting. In these cases Vaughn, Mcintosh, and Hogan (1990) suggest that teachers involve as many significant other people in the social skills instruction process.

Involvement of significant others in the instruction of social skills in the classroom should consider the use of peers as teachers. Procedures similar to those used in teacher-directed instruction have been demonstrated as effective elements of peer-mediated instruction. Students participating in well-constructed, peer-mediated instructional programs, for example, are given ample opportunities to practice the skills, receive im-

mediate error correction, and engage in frequent questioning. These elements, among others, contribute to the success of peer teaching programs (Greenwood, 1991).

Peer teaching programs have been used in education for many years to improve students' academic skills (Maheady, Harper, & Sacca, 1988). Numerous academically focused studies have demonstrated that adolescents with disabilities can be effective peer teachers and can learn from their peers (Campbell, Brady, & Linehan, 1991; Epstein, 1978; Lazerson, Foster, Brown, & Hummel, 1988; Osguthorpe & Scruggs, 1986; Scruggs & Osguthorpe, 1986).

Comparative studies have examined the efficacy of teacher versus student-led instruction. Greenwood and his colleagues (1984), for example, compared teacher-directed and peer-mediated instruction across the academic skills of spelling, vocabulary, and math. The results of four different studies demonstrated with minor exception (a non-English speaking group in one study) that peer tutoring, when compared to teacher-directed instruction, produced greater weekly achievement results.

In addition to improving academic skills, peer-mediated instruction has been effective in improving social relationships and other interpersonal skills. Some evidence indicates, for example, that young peers can act as mediators or in cooperative learning groups to enhance social skills among children who are at-risk for social problems (e.g., Battistich, Solomon, Watson, Solomon, & Schaps, 1989; Fowler, Dougherty, Kirby, & Kohler, 1986; Odern & Watts, 1991).

Most studies examining peer-mediation with social behaviors have taught students without disabilities to respond to the social behaviors of their peers with disabilities (e.g., Egel, Richman, & Koegel, 1981; Lancioni, 1982). Relatively fewer studies have examined the use of students with disabilities to improve the social behavior of their peers with disabilities (e.g., Sugai & Chanter, 1989). And even fewer studies have examined peer-mediated instruction in which students who have recently acquired a skill are then used as instructors or monitors for other students learning the same skill (e.g., Dougherty, Fowler, & Paine, 1985).

Although an abundance of peer-mediated research exists, no study was located in which students with disabilities received teacher-directed social skill instruction and, in turn, taught the same social skills to other students with disabilities. The purpose of this study was to examine the effectiveness of teacher lead social skill instruction for students with LD as compared with peer-mediated social skill instruction across three social skills, namely, *giving positive feedback, contributing to discussions,* and *accepting negative feedback.* In particular, we examined the rate at which each group reached criterion (indicating acquisition of the skill), as well as short-term maintenance of each skill.

Method

Participants and Setting

All 17 students who participated in the study were enrolled in the seventh grade and received special education services in an intermediate school in Hawaii. The school, which was situated in a middle-class suburban neighborhood, was comprised of a diverse blend of ethnic, cultural, and socioeconomic groups. A total of 915 students were enrolled in the seventh and eighth grades. The social skill instruction took place in the special education classrooms that were located in the same building as other classrooms.

Every student who participated in this study was identified as having a specific learning disability by a multidisciplinary team of specialists using local district criteria. The eligibility criteria for a learning disability consisted of the following: (a) evidence of a severe discrepancy between academic achievement and intellectual functioning (as indicated by a difference of at least one and one half (1.5) standard deviations in one or more of the seven categories identified by the Individuals with Disabilities Education Act) that is not primarily the result of physical, mental, emotional, environmental or cultural differences; and (b) evidence of two or more processing deficits including: perception (discrimination, figure-ground, attention or closure), memory (auditory memory or visual memory), reasoning (concept formation or problem-solving), and communication (oral expression or listening comprehension) (State of Hawaii, 1988).

All participants demonstrated poor reading and math skills requiring special education services in segregated classes for math, English, and science. Ten of the 17 students received special education services in segregated social studies classes. Three of the students were female.

Participants were assigned administratively to classes prior to the initiation of the study. Students in Class 1 (n=12) received teacher-directed social skill instruction. Of those 12 students, five were also members of Class 2. These five were, therefore, selected to be the peer trainers. The remaining seven Class 1 members did not participate in peer training. Class 2 consisted of 10 students, the five peer trainers (from Class 1) and five students who received peer-taught social skill instruction. Class 2 was selected to be the peer training group because of the convenience of having five members who were taught social skills by their teacher and who could then, in turn, teach the remaining five members of Class 2. Those who received teacher-directed instruction became Group 1 (Group 1 was equivalent to Class 1). Those taught by their peers became Group 2 (Group 2 was a subset of Class 2).

Students in the two classes were judged by the teachers to be equivalent in terms of academic performance and social skill development. The special education teachers reported that all 17 students demonstrated social skill deficits. Based on their knowledge of the students' skills, three

social skills were selected for implementation in this study.

Target Behaviors

The social skills targeted in this study included *giving positive feedback, contributing to discussions,* and *accepting negative feedback.* Five of the students were also taught a fourth skill, *teaching interactions,* in order for them to serve as peer teachers. The special education teachers in the school selected the target behaviors. They felt these particular skills would aid instruction and enhance students' ability to socialize appropriately with peers and teachers in and out of class.

The skills of *giving positive feedback* and *accepting negative feedback* were taken from ASSET: *A Social Skills Program for Adolescents* (Hazel et al., 1981b). *Contributing to discussions* was taken from *Skillstreaming the Elementary School Child* (McGinnis, Goldstein, Sprafkin, & Gershaw, 1984). The last skill, *teaching interactions,* was modified from research using parents as teachers of their children (Phillips, Phillips, Fixsen, & Wolf, 1974; Serna, Schumaker, Sherman, & Sheldon-Wildgen, 1991). Skill sheets similar to the one depicted in Table 1 were used for all four skills.

Giving positive feedback entailed the nonverbal behaviors of facing the person, keeping eye contact, having good posture, using an enthusiastic voice tone, smiling slightly, and staying at about one arm's length from the other person (Hazel et al., 1981b). The verbal subskills included giving the feedback; waiting for the person to respond; and, leading into a conversation if the response was positive, or restating the complement and changing the subject if faced with a negative response.

The second social skill, *contributing to discussions,* required almost the same nonverbal behaviors as *giving positive feedback.* The two differences included voice tone and personal space. *Contributing to discussions* required a less enthusiastic, yet pleasant voice tone of the speaker, and the space between the speaker and other parties ranged from three to fifteen feet, depending on the setting. The verbal behaviors associated with *contributing to discussions* included deciding whether something deserves to be said, ascertaining relevance to the discussion, deciding exactly how to say it, raising a hand to obtain permission to speak, waiting to be acknowledged, and contributing the idea after being acknowledged to speak.

The nonverbal behaviors for *accepting negative feedback* differed from *giving positive feedback* in two areas, voice tone and facial expression. Due to the nature of *accepting negative feedback,* the use of a normal voice tone and a neutral facial expression were mandated. The skill steps included the following: (a) wait quietly while the negative feedback is given; (b) if the feedback is unclear, ask for clarification; (c) apologize and either ask for suggestions or confirm understanding if in agreement; and (d) if appropriate and permission is granted, tell your side using factual statements. *Accepting negative feedback* also entailed the unconditional accep-

tance of negative feedback, if given by an authority figure, and the decision of whether or not to accept the criticism, if given by someone other than an authority figure.

Table 1.
A Sample Skills Sheet

Teaching Interactions

1. **Face** the person.
2. Keep **eye contact.**
3. Keep a **neutral facial expression.**
4. Use a **normal tone of voice.**
5. Keep a **straight posture.**
6. **Give** the learner an initial **positive comment.**
   "I'm glad we can work together."
7. **Specify and define** what you want the learner to do.
   Say exactly what you want done and how you want it done.
   "I want you to.. "
   "This is what we're going to do."
8. **Give a rationale** (both positive and negative consequences).
   (why the skill is important)
   "This is very important because..."
   (why it is important to use the skill correctly)
   "It is very important to do this correctly because..."
9. **Demonstrate** the correct behavior for the learner.
10. Have the learner **practice** the skill for you.
11. **Praise** the learner for doing the skill.
    (be descriptive and specific)
    "You did a good job with" "I like the way that you"
12. **Correct** the learner's behavior if he/she did not do the skill correctly.
    "You did a good job, so let's try it again, only this time, let's work on..."
13. **Repractice** the skill with the learner (after you have corrected his/her behavior.
14. **Praise** the learner for doing the skill.
    "That was much better." "You did an excellent job. "
15. **Talk** with the learner and **plan** when s/he will use this skill.
    "Now that you know how to ... when do you think you'll be able to use this skill?"

Teaching interactions warranted the same nonverbal behaviors as *accepting negative feedback.* Verbal behaviors included the following: (a) give the learner a positive comment; (b) specify and define what the learner is to do; (c) provide a rationale, citing the importance of correctly accomplishing the task; (d) demonstrate an example of the correct behavior; (e) assist the learner in practicing the social skill; (f) if the skill was used correctly, provide immediate and specific praise; (g) if the learner did not use the social skill correctly, provide corrective feedback; (h) assist the learner in practicing the social skill again; (i) praise the learner; and (j) discuss specific ways of applying the learned skill in future situations (see Table 1).

Experimental Design

A multiple-baseline across-skills design (Baer, Wolf, & Risley, 1968) was used to assess the effects of social skill training on each group. Data were collected during baseline and post-teaching. During baseline, students were asked to perform the skills without receiving any instruction. The post-teaching data were collected after students performed the behavior with 100% accuracy in the teaching situation.

Data Collection Procedures

The skills were scored according to the occurrence of each of the verbal and nonverbal behaviors, using a 2-1-0 rating system. A behavior was assigned 2 points if it was an exact match of the behavior described. A score of 1 point was assigned for an approximation of the desired behavior, and a "0" was given if the behavior was performed incorrectly or did not occur at all. A percentage score was computed for each student performance of each skill, based on a possible 2 points for each skill step divided into the total points the student received.

Test data for the three social skills were collected by one of the students' special education teachers who had received observation training through university coursework. Behavior was scored using the score sheets (see Table 2). Students were asked by the teacher to perform the desired skill in a role-play situation. Students were rated on how well they performed the behavior using the 2-1-0 rating system described earlier. For the testing situation, between 3 to 6 students were randomly selected each day to perform the targeted skills. Either the teacher or a peer role-played with the student. Test data for *teaching interactions* were collected in a similar fashion. Students role-played the skill while observers rated their accuracy of these skills.

Interobserver Reliability

Interobserver reliability was determined for 17% of all observations. Secondary observers included the students' special education English teacher, and another special education teacher who had no instructional contact with the students. The primary observer trained the secondary observers.

To determine reliability, two observers independently completed a score sheet while observing a student executing the target skills in testing sessions. Agreement between observers was assessed item-by-item for each skill component. Scores of 1, 1/2 and 0 were given to each skill component, depending on their proximity of agreement. A full agreement (i.e., 1) was recorded if both observers gave the same score to that component, a half agreement (i.e., 1/2) was recorded if observers were 1 point off in scoring the behavior; and no agreement was recorded (i.e., 0)

if the observers differed by more than 1 point. The percentage of agreement for each skill area was computed by dividing the total number of actual agreements by the total number of possible full agreements and multiplying by 100 to obtain a percentage figure.

Table 2.
A Sample of a Score Sheet

Score Sheet: Contributing to Discussions Name:

Group:

Date:

2 = exact match of described behavior
1 = approximation of the behavior
0 = nonoccurrence of the behavior

_____ 1. **Faced** the person.

_____ 2. Maintained **eye contact.**

_____ 3. Used **good posture.**

_____ 4. Used a **pleasant,** but not enthusiastic **voice tone.**

_____ 5. **Smiled** slightly.

_____ 6. Kept a **distance** of 3 to 15 feet.

_____ 7. **Contribution relevant** to discussion.

_____ 8. **Raised** hand to get permission to speak.

_____ 9. **Waited until** acknowledged.

_____ 10. **Contributed** to the discussion when asked to speak.

Interobserver reliability mean scores by skill area were as follows: Group 1 (teacher-taught): *giving negative feedback = 97%, contributing to discussions = 100%, accepting negative feedback = 93%;* and Group 2 (peer-taught): *giving negative feedback = 100%, contributing to discussions = 100%, accepting negative feedback= 94%.*

Teaching Procedures

Social skills training was conducted in one to five 20-30 minute sessions for each skill area. The number of sessions varied and was based on the amount of time needed for each member of the group to achieve 100% accuracy.

Group 1 took two days to reach criterion on *giving positive feedback* and *contributing to discussion* each; whereas, Group 2 reached criterion in one day on both. Group 1 reached criterion on *giving negative feedback* after five days of instruction, while Group 2 reached the same criterion in three days.

A special education teacher conducted training for Group 1. She gave a complete explanation of the skill and, as a group, participants were asked to give their own examples. Rationale for the skills was given, and again, the instructor asked students to provide examples. The teacher and students discussed situations when the skill would be applicable. The skill sheets were distributed to the students after which each skill step was explained and a rationale discussed. The teacher then modeled the whole skill and prompted student feedback after the modeling session. Students worked with randomly assigned partners to memorize the skill steps. Finally, every student participated in a role-play situation with his/her partner to practice the skill just learned. After practicing in partners, each pair role-played in front of the group. Training was continued until all students in the group could perform the skill with 100% accuracy.

Group 1 received training in the three social skills. Then the special education teacher trained five of the 12 students in the *teaching interactions* skill. The students applied the *teaching interaction* skill to train Group 2 (five of the students in Class 2) in the three social skills. Members of Class 2 worked in randomly assigned pairs to teach and learn each skill.

Teacher Poll

Four teachers who worked with the students were polled to determine if students' behavior in the three social skill areas had improved from the beginning of the school year to seven weeks after data collection had been discontinued. They were given a slip of paper on which was written: "Do you feel that (student's name)'s skill in (skill area) has improved since the beginning of the year?" Teachers responded "Yes" or "No." Results were calculated according to the number of "Yes" responses each student received.

Results

Acquisition of Social and Teaching Skills

On the skill of *giving positive feedback,* students in Group 1 scored on the average, 43% and 81% during baseline and post-teaching conditions, respectively. Similar average gains were obtained on the skill of *contributing to discussions* (45% to 86%). Average gains on the skill *accepting negative feedback* were not as great (22% to 62%).

Students taught by their peers (Group 2) improved, on the average

from 22% to 76% on *giving positive feedback,* 58% to 81% on *contributing to discussion,* and 13% to 51 % *on accepting negative feedback.* The five peer tutors' average scores on the skill of *teaching interactions* were 39% during baseline and 95% during post-teaching.

The mean scores for students in Groups 1 and 2 and ranges obtained for each social skill during baseline and post-training appear in Table 3. Table 3 also includes baseline and post-teaching scores for the *teaching interactions* skills taught to a randomly selected subgroup of Group 1. Average scores for each test session appear in Figure 1 for Group 1 and in Figure 2 for Group 2.

Table 3.
Mean Scores and Ranges by Group, Skill Area, and Condition

Skill Area	Group	Baseline		Post-Teaching	
		Mean	Range	Mean	Range
Giving Positive Feedback	1	43	30-60	81	60-100
	2	22	20-30	76	60-100
Contributing to Discussion	1	45	20-60	86	70-100
	2	58	50-100	81	58-100
Accepting Negative Feedback	1	22	14-33	62	46-78
	2	13	9-17	51	22-73
Teaching Interactions	1 [a]	39	29-46	95	93-96

Note. 1 [a] represents a randomly selected subgroup of Group 1.

Data were examined in terms of the instructional time required for each group to acquire the skills as defined by all students in the group achieving 100% accuracy during training. Group 1 required two days to demonstrate the skills of *giving positive feedback* and *contributing to discussions* where Group 2 performed the same skills at criterion in one day. Group 1 required five days and Group 2 required three days to master the third skill of *accepting negative feedback.*

Teacher Poll

Seven weeks following data collection, 83% of teacher responses indicated an improvement in skills for the students who served as peer trainers. The percentages of teacher responses indicating improvement in

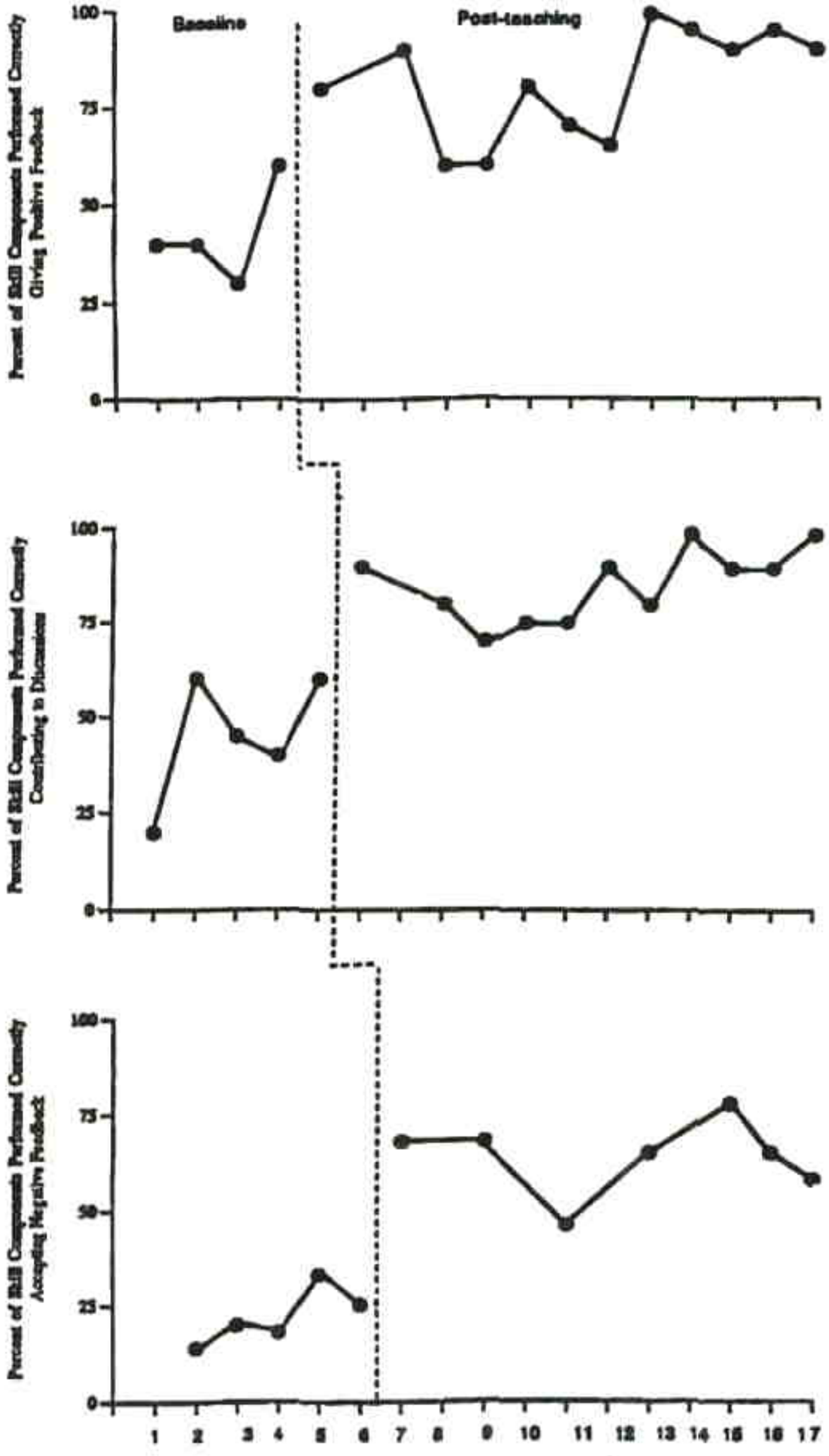

Figure 1. Acquisition and maintenance of skills taught by the teacher.

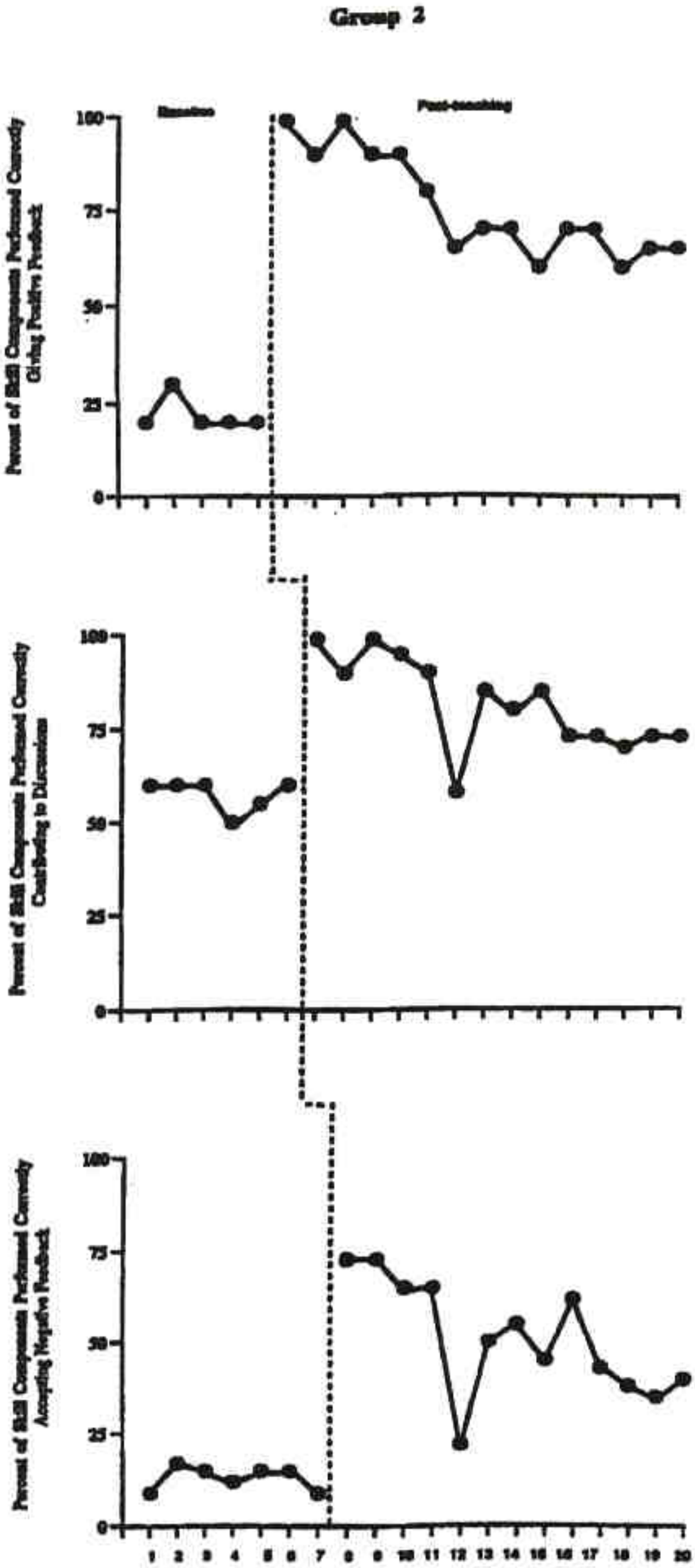

Figure 2. Acquisition and maintenance of skills taught by peers.

skills for students who were teacher-taught, but who were not peer trainers equaled 55%, and those who were peer taught equaled 66%.

Discussion

The purpose of this study was to examine the effectiveness of teacher-versus peer-led social skill instruction on acquisition and short-term maintenance of social skills by adolescents with learning disabilities. The data indicate that adolescents with LD can be trained to teach social skills to their peers with LD. When compared with teacher-trained students, those trained by their peers acquired the skills faster, but did not maintain the skill at levels as high as those taught by the teacher. Seven-week follow-up data indicated teachers' perceptions of improved student skills performance was greatest for those who were the peer teachers.

All students improved in all three social skills, never requiring longer than five days to perform the desired skill during training with 100% accuracy. Students taught by their peers acquired the social skills slightly faster than those who received teacher-directed instruction (one day vs. two days for two skills and three days vs. five days for the third skill). Although we don't know what variables contribute to the slightly faster learning rate, one possibility might be that learners related more directly with their peers as instructors in teaching social skills. The possibility also exists that the students in Group 2 were more proficient learners overall. The data indicate, however, that on the average, Group 2 scored lower during baseline on all three skill areas when compared with the average performance of Group 1.

The descending trend of the post-teaching data for Group 2 indicates a lack of maintenance for all three social skills. The post-teaching data for Group 1 represents more stability indicating students maintained higher levels of the skills for a longer period of time.

For both groups, the skill of *accepting negative feedback* took the longest to learn and was performed with the least accuracy during the maintenance period. In particular, students had the most difficulty with the unconditional acceptance of negative feedback from an authority figure. In addition, they had difficulty remaining calm and executing the steps of apologizing, asking for permission to tell their side, waiting for permission to be granted, and telling their side with facts rather than opinions. The data indicate that on the average, students did not maintain this skill regardless of their group assignment. On the average, students in Group 1 scored 62% and Group 2 scored 51% on the post-teaching role-plays. Although these scores do not represent mastery, they are improvements over baseline averages (22% for Group 1 and 13% for Group 2).

Teacher Poll

In terms of the teacher poll taken seven weeks following completion of

the study, more teachers of the peer trainers identified them as improving performance of the three social skills than those who were teacher-taught or peer-taught. We can only speculate regarding why these results were obtained. It is possible that peer tutors were perceived to have generalized the social skills to a greater degree because they were more actively engaged in the instruction of social skills having first been a student (instructed by the teacher) and then a teacher (instructing their peers). Although not empirically tested in this study, the potential of peer teaching to facilitate generalization of social skills in natural settings has been demonstrated elsewhere (e.g., Trapani & Gettinger, 1989) and requires further investigation.

Limitations

Several limitations of the study must be addressed. As discussed earlier, post-teaching data for Group 2 indicate a descending trend. Booster sessions, or reteaching the skills, may have improved the maintenance but was not done. Also, during each testing session a random sample of students performed the skills. Inasmuch as the total number of participants equaled 17 students, time and resources did not allow for data to be collected on all participants. Daily random selection of participants could have been replaced with a random selection of participants who were consistently tested throughout the testing sessions. This would add rigor to the study and may have alleviated some of the data variability obtained including the rising baselines for Group 1. However, if a random selection of students had remained consistent throughout the study, time and resources would not have allowed other participants to be tested as well. That is, only the same randomly selected participants would have been tested during every session, calling particular attention to these students and not leaving time for other students to be tested as well. Thus, we elected to use a daily random selection of participants.

Conclusions

As far as we can determine, no other study has examined the effects of peer teaching on social skill acquisition of students with learning disabilities. The results of this study contribute to the literature in both social skill instruction and peer teaching. Although many studies demonstrate that students with learning disabilities can be taught social skills through direct instruction, no other study has examined whether students with disabilities, who themselves had just acquired the skills, can teach their classmates the same skills.

The results of this study do warrant additional research focused on students with disabilities as peer teachers of social skills. Due to the limitations outlined above, future replications, as well as extensions of this study are needed. For example, the generalization effect of peer teachers

of social skills, as well as, the effectiveness of students with disabilities serving as peer teachers of social skills to those without disabilities would be of interest. Assessment of peer acceptance based on this peer-teaching model also warrants investigation.

Using peer trainers, rather than relying solely on teacher-directed instruction, may be an effective and a more efficient model of social skill instruction. Based on these results, however, researchers need to further examine the maintenance and generalization effects of teacher-versus student-led social skill instruction. If students could be taught, and then in turn, teach their peers appropriate social skills, more students in less amount of time could receive training in social skills, a content area often neglected, yet needed by a large proportion of adolescents with and without disabilities.

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