SOCIAL SKILLS TRAINING WITH LD ADOLESCENTS:
A GENERALIZATION STUDY

Jean B. Schumaker and Edwin S. Ellis

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The University of Kansas Institute for Research in Learning Disabilities is supported by a contract (#300-77-0494) with the Bureau of Education for the Handicapped, Department of Health, Education, and Welfare, U. S. Office of Education, through Title VI-G of Public Law 91-230. The University of Kansas Institute, a joint research effort involving the Department of Special Education and the Bureau of Child Research, has specified the learning disabled adolescent and young adult as the target population. The major responsibility of the Institute is to develop effective means of identifying learning disabled populations at the secondary level and to construct interventions that will have an effect upon school performance and life adjustment. Many areas of research have been designed to study the problems of LD adolescents and young adults in both school and non-school settings (e.g., employment, juvenile justice, military, etc.)

Director: Donald D. Deshler
Research Coordinator: Jean B. Schumaker

Institute for Research in Learning Disabilities
The University of Kansas
313 Carruth-O'Leary Hall
Lawrence, Kansas 66045

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Cooperating Agencies

Were it not for the cooperation of many agencies in the public and private sector, the research efforts of The University of Kansas Institute for Research in Learning Disabilities could not be conducted. The Institute has maintained an ongoing dialogue with participating school districts and agencies to give focus to the research questions and issues that we address as an Institute. We see this dialogue as a means of reducing the gap between research and practice. This communication also allows us to design procedures that: (a) protect the LD adolescent or young adult, (b) disrupt the on-going program as little as possible, and (c) provide appropriate research data.

The majority of our research to this time has been conducted in school settings in both Kansas and Missouri. School districts in Kansas which have participated or currently are participating in various studies include: Unified School District (USD) 437 Auburn-Washburn; USD 384, Blue Valley; USD 204, Bonner Springs; USD 308, Hutchinson; USD 500, Kansas City; USD 469, Lansing; USD 497, Lawrence; USD 453, Leavenworth; USD 480, Liberal; USD 233, Olathe; USD 290, Ottawa; USD 305, Salina; USD 450, Shawnee Heights; USD 512, Shawnee Mission; USD 464, Tonganoxie; USD 202, Turner; and USD 501, Topeka. Interlocal agencies in Kansas which have participated include: the Central Kansas Cooperative in Education, Salina; the East Central Kansas Special Education Cooperative, Paola; and the South Central Kansas Special Education Cooperative, Pratt. Parochial schools involved in our studies include: Bishop Miege High School, Shawnee Mission; Bishop Ward High School, Kansas City, Kansas; and O'Hara High School, Kansas City, Missouri. The Kansas State Department of Education also has been helpful in our research efforts.

Studies are also being conducted in several school districts in Missouri, including Center School District, Kansas City; the New School for Human Education, Kansas City; the Kansas City, Missouri School District; the Lee's Summit School District; the Raytown School District; and the School District of St. Joseph. In addition, school districts in Beaverton, Oregon; Delta County, Colorado; Elkhart, Indiana; Houston, Texas; Jonesboro, Arkansas; Montrose County, Colorado; Omaha, Nebraska; and Ottumwa, Iowa, have also participated in our studies. The Iowa Department of Public Instruction also has been helpful in our research effort.

Agencies currently participating in research in the juvenile justice system are the Overland Park, Kansas Youth Diversion Project; the Douglas, Johnson, Leavenworth, and Sedgwick County, Kansas Juvenile Courts; and the judicial district serving the Pittsburgh-Parsons, Kansas area. Other agencies which have participated in out-of-school studies are: Penn House and Achievement Place of Lawrence, Kansas; Kansas State Industrial Reformatory, Hutchinson, Kansas; the U. S. Military; and Job Corps. Numerous employers in the public and private sector have also aided us with studies in employment.

While the agencies mentioned above allowed us to contact individuals and supported our efforts, the cooperation of those individuals—LD adolescents and young adults; parents; professionals in education, the criminal justice system, the business community, and the military—have provided the valuable data for our research. Our sincere appreciation is expressed to all those who have contributed information to our research effort. This information will assist us in our research endeavors that have the potential of yielding greatest payoff for interventions with the LD adolescent and young adult.
Abstract

The purpose of this study was to determine the reliability of roleplaying as a device for assessing generalization of social skills training and to determine the extent to which LD adolescents generalize specific social skills to the natural setting following training. LD high-school students' social skills were observed before and after training in two types of situations: (a) contrived (but unobtrusive) situations in the subjects' natural environment and (b) novel role-playing situations. Results suggested that LD adolescents do not necessarily generalize recently learned social skills to novel role-playing situations and the natural environment. Also, high performance in a novel role-playing situation does not necessarily mean that a student will show a correspondingly high performance in the natural environment. These results imply that learning disabled adolescents must be trained to generalize newly learned social skills and that generalization of newly learned social skills should be measured in the learner's natural environment. Specific suggestions are provided to enhance generalization.
Learning disabled (LD) elementary-school students have been shown to exhibit social-skill deficiencies. For example, elementary-aged peers rated LD students significantly lower than non-LD peers in sociometric ratings by classmates (e.g., Bruininks, 1978; Bryan, 1974, 1976). Research also has shown that elementary LD students are twice as likely to be ignored by classmates and teachers (Bryan & Wheeler, 1972), make significantly more competitive statements, make and receive significantly more rejection statements than non-LD peers (Bryan, Wheeler, Felcan, & Henek, 1976), and are more likely to be devalued or rated lower than their peers by adults watching videotapes of their interactions (Bryan & Perlmutter, 1979).

In an effort to determine whether these social deficiencies continue through adolescence, Deshler, Schumaker, Alley, Warner, and Clark (1981) studied the social skills of adolescents in an epidemiological study of LD, normally achieving (NA), and low-achieving (LA) adolescents. An analysis of survey responses from youths, parents, and teachers showed that although normal achievers differed significantly from both the LD and LA students on a number of variables, only three variables (from the total of 30 variables related to the students' relationships with peers and their involvement in extracurricular activities) differentiated LD from LA students. In addition, the three groups did not differ on a number of variables, including those designed to assess peer and teacher rejection. The authors concluded that LD adolescents are not social isolates and that they do not appear to be socially distinct from other students experiencing difficulty in school. When compared to normal achievers, the students in both LD and LA groups exhibited social
deficits. In other words, results indicated that social deficits may not be related to learning disabilities, per se, but to low achievement in general. Nevertheless, the LD adolescents were the lowest social participators when compared to both the LA and NA groups.

In terms of the quantity of social interactions, Schumaker, Sheldon-Wildgen, and Sherman (1982) observed the numbers of times junior-high students: initiated interactions with peers, were the targets of peer initiations, responded to peer initiations, and engaged in conversations with peers. In addition, the number of different peers with whom each student interacted was measured. No differences were found between the LD and normally achieving groups.

To measure quality of interactions, two groups of researchers have used social-skills assessment devices to test adolescents' performance of a variety of social skills. In a study by Matthews, Whang, and Fawcett (1980a) an assessment device for occupational social skills was validated. In another study (Matthews, Whang, & Fawcett, 1980b), critical components of LD and normally achieving adolescents' social interactions in occupational situations were measured using a role-playing format. The LD students were found to perform significantly worse than the non-LD students in four of the ten situations: participating in a job interview, accepting criticism from an employer, giving criticism to a co-worker, and explaining a problem to an employer.

Using a similar type of assessment in role-playing situations, Schumaker, Hazel, Sherman, and Sheldon (1982) compared the social-skills performance of normally achieving high-school students, LD students, and juvenile delinquents on eight general social skills. Significant differences among the groups were found on seven of the eight skills. The LD students' performances were more similar to the juvenile delinquents' performances than to those of the normally
achieving students. The normally achieving students performed significantly better than the other two groups on seven of the eight skills. The researchers qualified these results by noting that some of the LD adolescents performed similarly to the normally achieving groups, while others performed similarly to the juvenile delinquent group on the test. Thus, the LD group was not found to be homogeneous with regard to social skills.

The above results suggest that some LD adolescents have social-skills deficits when compared to their normally achieving peers. Such social deficits appear to persist after LD adolescents leave high school. Thus, White, Schumaker, Warner, Alley, and Deshler (1980) reported that although LD and non-LD groups are similar in terms of the number of close friends they reported having, the LD young adults reported significantly less satisfaction with their recreational and social activities. For example, LD young adults belonged to significantly fewer community clubs and groups. Vetter, Deshler, Schumaker, Alley, and Warner (in prep.) found LD young adults, when interviewed, to report significantly more dating problems. In terms of free time, the LD young adults also reported spending significantly more time watching television by themselves.

The results of these studies indicate that although social-skill deficits cannot be targeted as characteristics solely associated with learning disabilities, social deficits are evident in learning disabled adolescents and appear to have an impact on their lives even after they leave high school. Alley, Deshler, Clark, Schumaker, and Warner (in press) noted that recent research findings stress the need for social-skills curricula and programming for LD adolescents. While efforts have been made to develop social-skills training programs for LD students (e.g., Rice, 1970; West, Carlin, Baserman, & Milstein, 1978), Hazel, Schumaker, and Deshler (in press) noted that experimental designs often are not used to evaluate the effectiveness of such programs.
The few research studies on social-skills training programs that have employed experimental designs indicate that LD adolescents seem not to exhibit difficulty learning social skills. Thus, Whang, Matthews, and Fawcett (1981) taught occupational social skills to LD students; Gorney-Krupsaw, Atwater, Powell, and Morris (1981) taught social skills for interacting with teachers; and Hazel, Schumaker, and Sheldon-Wildgen (1980) taught six specific social skills for general use. The results of the above studies showed that the LD adolescents learned the social skills quickly and were able to generalize them to new role-playing situations. Also, the skills were shown to be retained at or close to mastery levels after periods of time ranging from two to eight weeks. When testing the students' use of acquired skills in the natural environment after they had met criteria in training, Whang et al. and Gorney-Krupsaw et al. found little transfer of skills. Whang et al. observed the students in employment settings, and Gorney-Krupsaw et al. observed them in their regular classrooms. Students were shown either to use a small percentage of the components of a skill or to use the entire skill infrequently. The studies suggest that social-skill training results in generalization of skills across different task demands within the learning setting, but that LD adolescents exhibit difficulty generalizing social skills across settings. Nevertheless, it is unclear whether the low generalization noted was a function of few opportunities for using the skill or whether the students were not generalizing. That is, the students' low frequency use of the skill prior to and following training might have been the result of few opportunities for using the skill while the observers were present in the natural environment.

The purpose of the present study was twofold. First, a method of injecting contrived (but unobtrusive) situations into the natural environment needed to be perfected in order to insure that opportunities for generative responding
were available to the students. Such a technique must provide precision for measuring the degree to which specific social skills are used by students in real-life situations and for measuring generalization during a controlled number and type of "real" situations. The second purpose of this study was to assess the generalization of social-skills training by LD adolescents to contrived situations in the natural environment and to compare this performance to the use of the social skills in novel role-playing situations. Such a comparison was judged to yield important information regarding the usefulness of novel role-playing tests for assessing the extent to which an LD youth has incorporated a social skill within his/her repertoire.

Method

Subjects

Three secondary students, one male and two females, participated in the study. All the students were being served in an LD resource room program in their school. The students' school records were reviewed and their teachers were interviewed. Only students having IQs in the normal range (i.e., 80 or above), exhibiting deficits in one or more achievement areas, and not demonstrating any evidence of physical or sensory handicaps, emotional disturbance, or economic, environmental, or cultural disadvantage were included. The students' full-scale IQ scores were 93, 97 and 87, respectively, and their reading grade-level scores on the Woodcock-Johnson Psychoeducational Battery were 3.8, 4.9, and 4.4. Students 1 and 2 were in grade 10, while Student 3 attended grade 12. The three subjects were selected by administering the Social Skills Assessment Instrument from the ASSET Program (Hazel, Schumaker, Sherman, & Sheldon-Wildgen, 1981a) plus the assessment device of two more recently developed social skills (Hazel, Schumaker, Sheldon-Wildgen, & Sherman, Note 1) to all LD students in a resource room program at a high school. The
three selected students were in a group who had the lowest scores of all students on the 10 skills assessed. They volunteered to participate in the study after the social-skills training program was described to them. Their scores ranged from 17% to 89% of the skill components performed correctly on specific social skills; their total scores were 57%, 35%, and 28% on the entire battery of 10 social skills. The procedures of this study were described to the students and their parents, and written consent for participation was obtained.

Setting

The study took place in a public high school that serves a middle-class, suburban community with a population of 60,000. Treatment and role-play tests were administered in a small room adjacent to the resource room, while observations of "naturally" occurring interactions were made in the resource room setting. The resource room comprised one large room with several tables surrounded by chairs. As many as 12 students and three teachers were present in the resource room during observations.

Measurement System

The students' performance of specific social skills was measured using two types of situations: novel role-playing situations outside the classroom and contrived situations within the classroom. Whenever a student performed a social skill, observers used a checklist to score the performance. The checklists used were developed specifically by Hazel, Schumaker, Sherman, and Sheldon-Wildgen (1981b). These researchers validated the component parts of eight crucial skills for adolescents and developed the checklists for the eight skills to be used in behavioral role-play tests. Two other skills (asking questions and asking for permission) were later added to enable application of the assessment device in schools (see Note 1).
To ease scoring, the checklists were divided into two sections: nonverbal components (e.g., "Uses eye contact") and specific verbal steps for a given social skill (e.g., "Asks to talk to the person"). Each skill component performed by the youth while role playing was evaluated by an observer using a three-point rating scale; results were recorded on the checklist. Steps performed correctly were rated "2," approximations of correct performance were rated "1," while failure to perform a given step was rated "0." Ratings were totaled and divided by the total number of points possible to yield a percentage of steps performed correctly.

Interrater reliability was obtained by having a second observer independently rate a youth's performance in randomly selected role-playing and natural-environment situations before and after training. The two observers' records were compared item by item. Agreement between the two observers was scored when both assigned the same rating to a component step (e.g., 0 and 0, 1 and 1, 2 and 2). When the observers' ratings were within one point of each other (e.g., 0 and 1, 1 and 2), a one-half agreement was scored. A disagreement was scored for a two-point difference (e.g., 0 and 2). The observers agreed on 135 of 142 skill components observed for a total percentage of agreement of 95%.

Testing Procedures

Behavioral role-play testing. The youths were pretested individually on each of 10 skills using behavioral role-play situations. Situations which required the skills were developed from parent and youth reports of problem social situations frequently encountered by adolescents (Hazel et al., 1981b). Examples of the situations included solving a problem of having insufficient time to complete an assignment, initiating a conversation with an unknown visitor, requesting permission from a guidance counselor to take a class, and accepting negative feedback from a teacher about not completing assigned work.
The role-playing portion of the pretest consisted of a tester reading a test situation to the youth and instructing him/her to act as he/she would normally act in that situation. The tester played the other role in the situation. Following the interaction, the tester rated the youth's performance on the skill using the appropriate behavioral checklist. Role-play testing continued until the youth had been tested on each of the 10 skills.

Following the role-play pretesting, three or four skills were targeted for each youth to learn. A skill was targeted if the student performed less than 45% of the skill steps designated for that skill. The skills targeted for Student 1 were asking questions, accepting negative feedback, and giving negative feedback; for Student 2, they included giving negative feedback, following instructions, asking questions, and resisting peer pressure; and for Student 3: negotiation, personal problem solving, and giving negative feedback. Once each youth's social skills had been targeted, the second phase of pretesting was initiated.

Evaluation of the skills in the natural environment. Each youth was unknowingly involved in contrived situations in the resource room to assess his/her use of each of the targeted skills in the natural environment before and after training. Lists of situations requiring use of the targeted skills were developed using resource room teacher and student reports of typical problem situations arising in the resource room setting. Two male resource room teachers and three student confederates (one female and two males) were trained to create specific problematic situations and to respond to the target student's subsequent interaction.

Student confederates were paid $2.50 for each completed situation and were awarded a bonus of $2.50 per situation at the end of the study if the targeted student failed to detect that the situation was artificial. All student confederates received their bonuses for all situations.
A youth's ability to ask a question was measured by having the resource room teacher give vague instructions. In one situation, the teacher handed the target student a textbook and instructed him/her to "do Multipass to this." No further explanations were provided voluntarily; however, the teacher answered all the student's specific questions. In another situation, the teacher asked the target student to retrieve a book "by Mifflin" from a bookcase of over 200 disarranged books.

A youth's skill in resisting peer pressure was measured by having a student confederate attempt to get the target student to engage in an inappropriate activity. For example, the student confederate tried to get the target student to participate in a tic-tac-toe game or in a conversation during assigned seatwork, or asked if he could copy the target student's classwork.

A student's ability to negotiate was measured by having the teacher impose some unreasonable assignment or contingency on the student. For example, the teacher requested that the target student complete more work than was feasible in a class period, or requested that the student make up 20 minutes of work time for every one minute the student was late for class.

A student's skill at following instructions was measured by having the resource room teacher provide instructions which contained at least three directions and which were incongruent with usual classroom practices (e.g., "Put your name on the lower left-hand corner of your paper, place it in this folder on the top of the file cabinet, and begin this activity." The activity involved a word-sorting task with no relevance to content or skill acquisition).

A student's ability to accept negative feedback involved having the resource room teacher provide nonconstructive feedback to the target student regarding a completed assignment or personal appearance. Feedback was negative and vague. Teachers were asked to use descriptors which contained noncorrective information (e.g., "poor").
The adolescent's ability to solve personal problems was indirectly measured due to practical research considerations. To interject a personal problem-solving situation, a student confederate approached the target student and requested help in solving a problem of how to deal with an unwelcome peer who repeatedly asks for dates. Another situation involved a confederate presenting the target student with a problem relating to parents who constantly fight with each other.

The adolescent's ability to provide negative feedback was measured by placing a student confederate at a worktable with the target student during a time when students were required to work independently on assignments. The confederate disrupted the target student by rhythmically slapping the table for a few seconds, shaking the table, lightly tapping the student under the table, or humming. Another situation involved having the confederate repeatedly borrow paper from the target student, write for a moment, wad the paper up, and then request another sheet.

In all the contrived situations, the student-confederate or teacher discontinued the interaction after the targeted student had responded and the observer subtly signaled for the person to withdraw gracefully. The target student's responses to the natural environment situations were recorded on the same checklist of skill components used for the role-playing tests by at least one observer who was positioned unobtrusively at the side of the classroom.

**Instructional Procedures**

Each student received instruction from a certified LD teacher. The students met individually with the teacher during the regularly scheduled resource room period in a small room adjacent to the resource room. Sessions, which ranged in length from 20 minutes to one hour, were conducted on alternating days.
The instructional steps used to teach each skill were adapted from those outlined by Alley and Deshler (1979), Deshler, Alley, Warner, and Schumaker (1981), and Hazel et al. (1981b). They are as follows:

**Step 1: Test to determine the student's current learning habit.**
In this step, the student's social skills were tested in both role-playing and in contrived situations in the natural environment. After testing was completed, the teacher discussed the role-playing results with the student, affirming that the student exhibited a deficit in the way he/she interacted with people.

**Step 2: Describe the social skill.**
Next, for each social skill currently under instruction, the teacher described specific steps involved in the social skill and contrasted them with the student's current interaction behaviors as exhibited in the tests. The steps included the specific behaviors in which the student should engage and the sequence of behaviors which should be followed. As each step was explained, a rationale was given for why the behavior was important and how it would help the student interact with peers and adults more effectively.

**Step 3: Model the skill.**
In this step, the teacher modeled the social skill for the student. Thus, the teacher demonstrated the skill by acting-out each of the steps previously described to the student while "thinking aloud" so the student could witness all of the processes involved in the skill.

**Step 4: Verbal rehearsal of the strategy.**
At this point, the student verbally rehearsed the steps involved in the social skill to a criterion of 100% correct without prompts. This instructional step was designed to familiarize the student with the components of the social skill such that he/she would instruct himself/herself in the future as to what to do next when performing the social skill.

**Step 5: Practice in role-playing situations.**
In this instructional step, the student practiced applying the social skill to successive role-playing situations. As the student became proficient in the strategy, he/she was encouraged to progress from overt self-instruction to covert self-instruction while practicing the social skills.

**Step 6: Feedback.**
As the student applied the social skill strategy to a new role-playing situation, the teacher gave the student encouragement and both positive and corrective feedback. Steps 5 and 6 were recycled with additional role-playing situations until the student learned to use the social skill to a specified criterion of 100% of the skill components used correctly in a novel role-playing situation.

**Step 7: Test.**
The tests administered during Step 1 were given to the student again using novel role-playing situations and artificially generated "real-life" situations unique to the students.
Experimental Design

The study employed a modified multiple-baseline-across-social-skills design for each of the three students. Because each data point was costly to achieve in terms of student time out of special education instruction, training time for confederates, and teacher time in presenting or supervising contrived situations, the design was modified to utilize a minimum of data points. In baseline, each student was tested in role-playing and contrived situations on each skill targeted for him/her. Then the first social skill was taught. When the student performed 100% of the skill components correctly in training without prompts from the teacher, training on the first skill was discontinued. On another day, the student participated in a role-playing test of the skill just learned and the next skill targeted for training. Both skills also were tested within the natural setting using contrived situations. Then the next social skill was trained and another set of tests given. This sequence proceeded until all the skills targeted for a student had been trained and the student's pre- and posttraining performance of the skill in novel role-playing situations and in the natural environment was tested.

Results

Figure 1 shows the generalization results for one student, a 10th-grade female fictitiously named Karen. Each of the three graphs shows the percentage of component behaviors performed correctly by this student on one of the three social skills targeted for her: negotiation, personal problem solving, and giving negative feedback. Performances in novel role-play situations are represented by the dots, while performances in the contrived situations in the natural environment are represented by the open squares. Training is represented by the vertical dashed line. When confronted with a situation in which she could negotiate before training, Karen performed 69% of the components of
the negotiation skill correctly in a role-playing situation but only 26% correctly in the natural environment. After training, she performed 94% of the components correctly in both types of situations. For personal problem solving, she performed an average of 28% of the skill components correctly in role playing before training and 30% of the components in the natural setting. After training, she did not show improved performance in the role-playing situation, using only 22% of the skill components; however, in the contrived situation she correctly used 66% of the skill components. In giving negative feedback before training, Karen used an average of 32% of the components correctly in role playing and 26% in the natural setting. After training, she improved her performance in role playing to 78% of the components performed correctly; however, her performance in the natural setting did not improve. She performed only 22% of the skill components correctly.

Figures 2 and 3 show the multiple-baseline results for the other two subjects, fictitiously named Mike and Laurie. After receiving training, Mike (see Figure 2) showed no generalization in giving negative feedback in the role-playing situation and only a slight amount of improvement in the natural environment. After learning to follow instructions, he generalized to role-playing situations but not to the natural environment. He again showed improvement after learning how to ask questions, but this time he improved in both test settings. Finally, Mike showed 100% use of the resisting peer pressure skill in a novel role-playing situation after training. In the natural setting, he showed no improvement as a 50% performance was within his baseline range of performances.

Laurie's performances (see Figure 3) showed similar mixed results. Her role-playing performance improved greatly after learning each of the three skills targeted for her. Her performance in the natural setting improved on
two of the three skills, but her performance on asking questions after training had deteriorated when compared to her baseline performance.

Discussion

The results of this study suggest several conclusions with implications for the social-skill training of learning disabled adolescents. First, even after they have learned a social skill to a criterion of 100% correct, learning disabled adolescents do not necessarily generalize their use of the skill to novel role-playing situations or, more importantly, to the natural environment. Nevertheless, on a more positive note, the results indicate that learning disabled adolescents are capable of generalized use of a social skill in the natural environment. One of the three students in this study (Karen) performed more than 90% of the components of one social skill in the natural environment after training. All subjects showed improved performances in the natural setting after training with some skills (Karen with two skills, Mike with one, and Laurie with two), and in these instances they appeared to be trying to use their new skills. For example, when confronted by a friend with a difficult personal problem, Karen said, "I just learned something that should help us here." She then proceeded to take out a piece of paper and to list optional solutions to the problem and their consequences. All of these responses were skill steps she had learned to use when solving personal problems. Unfortunately, most of the students' gains were not large and, at best, the performances only approximated a level of performance which can be considered adequate (at least 80% of skill components performed correctly).

The students seemed more likely to show improvement in novel role-playing situations than in the contrived situations in the natural environment. The results indicated that a high performance in a role-playing situation does not necessarily mean that a student will show a correspondingly high performance.
in the natural environment. Conversely, a high performance in the natural setting does not ensure a correspondingly high performance in role playing. Thus, performances on the two kinds of tests appeared to be independent of each other for the three students in this study.

These results imply that learning disabled adolescents must be trained to generalize their newly learned social skills. They cannot be expected to generalize as a matter of course. In addition, the results indicate that performances in novel role-playing situations do not necessarily reflect how a learning disabled student will generalize newly learned social skills to the natural environment as evidenced by instances where the students performed better in the role-playing situation than in the "natural situation." Situations within the natural environment must be utilized to measure such generalization.

Recently developed generalization procedures at the University of Kansas Institute for Research in Learning Disabilities (Schmidt, Deshler, Alley, & Schumaker, in prep.) for use with learning strategies instruction seem applicable here. According to these procedures, after students learn a skill, they are made "aware" through discussion of the kinds of situations in which the skill can be used in the natural environment. Next, the students' generalization of the skill is "activated" by having them perform the skill within the natural milieu. The teacher must give the student specific feedback after the skill has been performed. This activation sequence could be accomplished within social-skills instruction by surprising the student with a series of contrived situations and giving the student feedback after each performance until he/she meets a specified criterion within the natural setting. Finally, there must be a provision for ensuring "maintained use" of the social skill. Here, oral review of skill components and practice in contrived situations
can be used relatively infrequently to ensure that the students remember to use the skill.

In order for this sequence of generalization activities to take place, the learning disabilities program must target social skills as a major focus. Thus, social-skills instruction must pervade all the other activities taking place in the program and students would have to be ready to act as "confederates" in contrived situations at a moment's notice. Perhaps a game format would be useful with the students having an opportunity to gain points by performing skill components correctly or by presenting contrived situations to other students without divulging their contrived nature and accurately reporting the other students' performances.

This study extends previous work in the area of social-skills training for LD adolescents by showing that LD adolescents do not automatically generalize their use of newly learned social skills to the natural setting even when opportunities to use such skills are carefully programmed into their environment. Conclusions must be tempered by the small number of subjects included. However, when combined with those of previous studies (Gorney-Krupsaw et al., 1981; Whang et al., 1981), the results of the present study indicate that generalization training is needed by LD adolescents when learning social skills. Future research should focus on the most effective methods of promoting generalization to the natural setting of the classroom and beyond to other classrooms, the home, and the community.
Reference Notes

References


TABLE 1

Average Percentage of Skill Steps Performed Correctly before and after Social Skills Training

<table>
<thead>
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<th>Negotiation</th>
<th>Personal Problem Solving</th>
<th>Giving Neg. Feedback</th>
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<tr>
<td>Karen</td>
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<tr>
<td>Role Playing</td>
<td>Before 69%</td>
<td>After 94%</td>
<td>Before 28% After 22%</td>
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<tr>
<td>Natural Environment</td>
<td>Before 26%</td>
<td>After 94%</td>
<td>Before 30% After 66%</td>
</tr>
<tr>
<td>Mike</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Role Playing</td>
<td>Before 23%</td>
<td>After 24%</td>
<td>Before 36% After 91%</td>
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<td>Natural Environment</td>
<td>Before 11%</td>
<td>After 28%</td>
<td>Before 43% After 46%</td>
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<tr>
<td>Laurie</td>
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<td></td>
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<tr>
<td>Role Playing</td>
<td>Before 42%</td>
<td>After 86%</td>
<td>Before 50% After 82%</td>
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<td>Natural Environment</td>
<td>Before 63%</td>
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<td>Before 50% After 79%</td>
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Figure 1

Social Skills Generalization

![Graph showing generalization of social skills across different tests: Negotiation, Personal Problem Solving, Giving Negative Feedback. The graph compares baseline and after training performances.]

- **Negotiation**
- **Personal Problem Solving**
- **Giving Negative Feedback**

Tests:
- ● - Novel role-playing situation
- □ - Contrived situation in natural environment
Figure 2

Social Skills Generalization

Tests

- Novel role-playing situation
- Contrived situation in natural environment
Figure 3

Social Skills Generalization

- Asking Questions
- Accepting Negative Feedback
- Giving Negative Feedback

Baseline vs. After Training

Tests

- Novel role-playing situation
- Contrived situation in natural environment