


**INSTITUTE
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The University of Kansas
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Emphasis on Adolescents and Young Adults

Application of a Social Skill and
Problem-Solving Group Training Program
to Learning Disabled and Non-Learning
Disabled Youth

J. Stephen Hazel, Jean Bragg Schumaker,
and Jan Sheldon-Wildren

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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 on-going 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 public school settings in both Kansas and Missouri. School districts in Kansas which have or currently are participating in various studies include: Unified School District USD 384, Blue Valley; USD 500, Kansas City, Kansas; USD 469, Lansing; USD 497, Lawrence; USD 453, Leavenworth; USD 233, Olathe; USD 305, Salina; USD 450, Shawnee Heights; USD 512, Shawnee Mission; USD 464, Tonganoxie; USD 202, Turner; and USD 501, Topeka. Studies are also being conducted in several school districts in Missouri, including Center School District, Kansas City, Missouri; the New School for Human Education, Kansas City, Missouri; the Kansas City, Missouri School District; the Raytown, Missouri School District; and the School District of St. Joseph, St. Joseph, Missouri. Other participating districts include: Delta County, Colorado School District; Montrose County, Colorado School District; Elkhart Community Schools, Elkhart, Indiana; and Beaverton School District, Beaverton, Oregon. Many Child Service Demonstration Centers throughout the country have also contributed to our efforts.

Agencies currently participating in research in the juvenile justice system are the Overland Park, Kansas Youth Diversion Project, and the Douglas, Johnson, Leavenworth, and Sedgwick County, Kansas Juvenile Courts. 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 support 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. 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 efficacy of training social and problem-solving skills to learning disabled adolescents was evaluated by conducting a group skill training program with three sets of youths. The first set of youths were learning disabled adolescents attending an alternative high school. The second group of youths were non-learning disabled youths attending the same school. The third group of youths were court-adjudicated youths on probation with a juvenile court. The six skills taught during the program were: giving positive feedback, giving negative feedback, accepting negative feedback, resisting peer pressure, negotiation, and problem-solving. Training procedures consisted of skill explanation, rationales, modeling, and behavioral rehearsal with feedback.

Skills were trained in a multiple baseline design across skills. Youth performance of the skills was assessed through behavioral role-play testing using novel, non-practiced situations. Results of the behavioral role-play tests showed that all three groups of youths performed the skills at low levels prior to training. With the training of each social skill, increases were shown by each group in that social skill level. Baseline levels of the untrained skills remained stable until after training. The initial increases apparent after training generally were maintained or increased throughout the program. On the cognitive problem-solving skill, learning disabled adolescents showed a slight gain when compared to gains for non-learning disabled and court-adjudicated youths. Results will discuss the initial skill levels of learning disabled youths, the effectiveness of training programs and areas of future emphasis related to social and cognitive skill training.

Introduction

Learning disabled youths suffer from information processing difficulties which can hinder their performance in a number of areas (Council for Exceptional Children, 1971). One area in which LD youth may have difficulty is psychosocial skills. Psychosocial skills consist of both cognitive and behavioral skills necessary for interacting with others. Kronick (1978) reviewed a large amount of literature indicating that LD youths exhibit deficits in psychosocial skills. Deshler (1978) argued that LD adolescents show significant problems in social adjustment and social perception. He emphasized that difficulties in these areas manifest themselves in the individual's inability to judge one's impact on others, to generalize from one situation to another, and to interpret others' moods and communications. The combination of these social skill and problem-solving deficits would seem to produce a considerable handicapping effect in the social realm on an individual who is already handicapped in the academic realm. For example, competing with others in the job market who do not exhibit such deficits would be difficult.

Empirical research in the area of social skill deficits in the LD adolescent is lacking. Research on elementary LD students has shown that they are rated significantly lower than non-LD peers in sociometric ratings by classmates (e.g., Bruinicks, 1978; Bryan, 1976), 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).

The research on the social skills of LD adolescents to date has not been definitive. In a descriptive study comparing LD adolescents to low-achieving (LA) and normally-achieving (NA) adolescents, Deshler, Schumaker, Warner, Alley and Clark (1980) found few differences in the social realm between the LD and LA students. LD students are asked less frequently than LA students to go somewhere with peers, although LD adolescents initiate activities more often than LA peers. LD and LA students spend significantly more time in their neighborhoods and at home with significantly less time engaged in extra-curricular school activities and out-of-school activities than their normally-achieving peers. The results of this study indicate that LD adolescents may not be socially different from others who are doing poorly in school, but that deficits in social skills may be a discriminating factor between LD and LA students and normally-achieving students.

In a study involving classroom observations of LD junior high students, Schumaker, Sheldon-Wildgen, and Sherman (1980) showed that the LD students were not social isolates in their classrooms: they spoke as often and to as many different peers as the non-LD students who were observed. These authors recommended that more specific analyses of the social skills of LD adolescents be done to tap the quality of their interactions with others.

In analyzing the quality of LD adolescents' interactions as they relate to occupational skills, Mathews, Whang, and Fawcett (1980) found that LD adolescents performed significantly poorer than non-LD peers on four occupationally-related social skills: participating in a job interview, accepting criticism from an employer, giving constructive criticism to a co-worker, and explaining a problem to a supervisor.

This research would seem to indicate that while deficits in social skills may not be a distinguishing factor for the condition of learning disabilities in adolescents when compared to other low-achieving adolescents, LD adolescents may show social skill deficits in relation to normally-achieving peers at least in the realm of occupationally-related social skills. If, in fact, LD adolescents are deficient in a wide range of social skills, remediation programs should be developed to eliminate such deficits. Only then can LD adolescents hope to compete in a world where interactions with others often determine one's success at gaining desired goals.

Some efforts have been made to develop such social skill training programs for learning disabled children. Among these, West, Carlin, Baserman, and Milstein (1978) described a program for teaching prosocial skills to LD children. Rice (1970) described a program for improving the personal appearance and etiquette of institutionalized LD adolescent girls. Neither of these studies, however, operationalized the social behaviors taught or the program of treatment used. In addition, experimental designs were not used to evaluate the effectiveness of their treatment.

Cooke and Apolloni (1976) reported on one of the few programs in which carefully defined social behaviors were trained and in which an appropriate experimental design was used to evaluate the effectiveness of their training program. Their study showed that four social behaviors: smiling, sharing, positive physical contact and verbal complimenting, could be taught to learning disabled elementary school children through the use of instructions, modeling, and social praise.

The current authors have developed a social skills assessment instrument and a group training program that have been shown to be effective in assessing and training social skills in adolescents on probation with juvenile court systems (Hazel, Schumaker, Sherman, & Sheldon-Wildgen, in press). The purposes of this study were to: (1) determine whether LD adolescents have a broader range of social skill deficits than those reported in the occupationally-related area; (2) determine whether LD adolescents respond to a social-skill training program such that they learn the skills and can generalize the learned skills to new situations; and (3) compare the social skill levels and responses of LD adolescents to those of other adolescents exhibiting problems in the social realm.

Method

Subjects

Three groups of youths participated in this study. The first group of youths (the LD group) were learning disabled adolescents attending an alternative high school for students referred following a period of "dysfunctional" behavior in a traditional educational setting. The primary problems of the students involved chronic truancy and non-compliance with teachers and parents. This group of LD students was composed of seven youths, six males and one female, whose ages ranged from 13.8 years to 15.8 years ($x = 14.9$ years). They were classified as learning disabled through a three step process. First, the students were tested using selected subtests of the Woodcock-Johnson Psycho-Educational Battery (the letter-word identification, word attack, passage comprehension, calculation, applied problems, dictation, and proofing subtests), and selected subtests of the WISC-R or WAIS

(vocabulary and block design subtests). Second, demographic and other information regarding previous school history were collected from school records, parents, and the director of the school. Included in this information was previous history of receiving special education services, of being diagnosed as learning disabled or having any history of mental retardation, emotional disturbance, physical or sensory handicaps, or having evidence of experiencing any cultural, environmental, or economic deprivation. Third, the test results and other information gathered were presented to a four-member Validation Team composed of LD teachers and school psychologists. After reviewing the information, members of the Team voted to include or exclude each youth from the LD group based on their judgment that the youths did not exhibit any cultural, physical, or emotional handicaps, but did exhibit learning disabilities. Thus, all youths in the LD group were students who received three or more votes to be included in the LD group. Their pro-rated IQ scores¹ ranged from 86 to 117 (\bar{x} = 99), their reading achievement percentile scores from the 20th to the 96th (\bar{x} = 43rd), their math achievement percentile scores ranged from the 2nd to the 56th (\bar{x} = 23rd), and their writing achievement percentiles ranged from the 7th to the 41st (\bar{x} = 19th).

The second group of students (the non-LD group) was composed of students in the same school who were excluded from the LD group by the Validation Team through the procedures described above. This group included seven female students who ranged in age from 13.9 years to 18.1 years (\bar{x} = 15.4 years). Their prorated IQ scores ranged from 88 to 112 (\bar{x} = 102), their reading achievement percentiles ranged from the 37th to the 81st (\bar{x} = 62nd), their math achievement percentiles ranged

from the 10%ile to the 91%ile (\bar{x} = 49%ile), and their writing achievement percentiles ranged from the 27%ile to the 77%ile (\bar{x} = 53%ile).

The third group of youths were seven youths, five males and two females, on probation with a nearby juvenile court. These youths were not screened for learning disabilities (due to lack of access to their school records) and did not attend the school attended by youths in the other two groups. They voluntarily participated in the social skill training program after it was described to them and their parents. Ages ranged from 14 years to 17 years (\bar{x} = 16.1 years). The offenses committed ranged from assault and burglary to running away and truancy. They had been referred to the skill training program by probation officers who judged them as deficient in basic social skills.

Measurement Systems

Eight skills were identified as necessary and important skills for adolescents (Hazel et al., in press). Six of these skills were chosen for training: giving positive feedback, giving negative feedback, accepting negative feedback, resisting peer pressure, negotiation, and personal problem-solving. The component parts of each social skill, including both the verbal and non-verbal steps required to perform the skill, were delineated. The problem-solving skill was a non-interactive cognitive skill which required the youth to verbally describe a social problem, generate three solutions, evaluate the consequences of each solution, choose the best solution, and decide how to implement the solution. Refer to Table 1 for a sample breakdown of components.

Behavioral checklists were developed to assess the youths' performance of each skill in behavioral role-play tests. The checklists for the social skills were divided into three sections for ease of

scoring: non-verbal components, specific verbal steps, and general verbal components for a given social skill (see Table 2). The checklist for the problem-solving skill consisted of a sequential listing of all steps needed for the skill. Each skill component performed by the youth was recorded on the checklist by the observer using a three-point rating scale. Correctly performed steps were rated "2", approximations toward correct performance were rated "1", and failure to perform the step was rated "0". These ratings were totaled and divided by the total number of points possible to yield a percentage figure of steps performed correctly.

Interrater reliability was obtained by the presence of a second observer who independently rated youth performance. The two observers' records were then compared item-by-item. An agreement between the two observers was scored when both observers gave the same rating to a component step (e.g., 0 and 0, 1 and 1, 2 and 2). A one-half agreement was scored when the observers rated within one-point of each other (e.g., 0 and 1, 1 and 2). A disagreement was scored for a two-point difference (e.g., 0 and 2). This form of reliability calculation allowed for changes in skill performance from low levels of skill performance before training (high nonoccurrence) to high levels of skill performance after training.

Procedures

Behavioral role-play testing. Youths were individually pre-tested on each skill using behavioral role-play situations. Lists of situations requiring use of the skills were developed from parent and youth reports of problem social situations frequently encountered by adolescents (Hazel et al., in press). Examples of problem situations included a

friend trying to talk a youth into shoplifting, negotiating with parents for a later curfew, or solving the problem of not having sufficient time to complete an assignment.

The pre-test 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 acted the other role(s) in the situation following a general sequence of role-play interaction instructions. The tester then rated the youth's performance on the skill using the behavioral checklist for that skill. The testing was continued until the youth had been tested on each of the skills.

Weekly during the treatment program and at the program's end, youths were individually tested to determine whether they could generalize skills that had been taught to new situations and whether they had generalized specific skill components across skills (e.g., eye contact was a skill component included in all of the social skills). Skill testing was done only as time would allow following each group meeting, thus not all skills were tested each week. Each time the youths were tested, novel situations were presented which had never been practiced in group meetings nor presented in previous testing sessions.

Group training. Three groups of youths were organized. The LD and non-LD youths attended the group program in their school. These youths were randomly divided into two groups which met once a week for two hours for ten weeks during school. The group leaders were not aware of the youths' classification as LD or non-LD. The third group of youths, youths on probation with the juvenile court, met in the juvenile court offices one night a week. The same two group leaders led all three groups.

All group meetings, except the first, began with a review of previously learned skills in which the youths performed the skills in verbal and behavioral rehearsals. The youths then learned a new skill following seven training steps. The first training step involved an introduction and description of the skill to be learned. Next, rationales emphasizing how use of the skill could benefit the youths in their interactions with others were discussed. The third training step involved a discussion of example situations in which the skill could be used. For the fourth training step, each group participant received a copy of the skill components and the group discussed and gave rationales for each skill component. Next, the group leader modelled the skill in a role-play situation. The group members then verbally rehearsed the skill steps until they could name the steps in the correct order. The seventh training step involved rehearsal of the skill by the youths. In this step, pairs of youths, using a situation of their choice, acted out the situation using the skill. After each of these role-play interactions, the group leader asked the other youths to give feedback to the performing youth on his/her performance. The role-plays continued until each youth had practiced the skill at least twice and had met criterion, performing the skill with 100% accuracy without prompts from the group leader or other group members and without use of the skill sheets. Each time a youth practiced, a new situation was used.

After each youth performed the skill to criterion, he/she was individually tested in the behavioral role-play tests using novel situations for each role-play. Following testing, the youths received refreshments during a conversation period.

Experimental Design

The experimental design was a multiple baseline across skills design. The sequence of skill training for the LD and non-LD groups was decided on the stability of the baselines for all youths. The training sequence for the juvenile court youths was independently chosen based on the stability of their baselines. The youths in all groups were tested after each meeting on some of the skills, thus, providing the data for the behavioral skill levels. This design allowed continuous evaluation of the effectiveness of the training program on each skill and retraining if skill performance did not increase sufficiently.

Results

Interrater reliability was assessed on 19% of the role-play tests by independent raters. Point-by-point reliability calculated on their checklists showed that out of 1699 possible opportunities for agreement, there were 1481 agreements. Thus, the overall percentage of agreement was 87%. The reliability for individual checklists ranged from 82% to 94%.

The results of the behavioral role-play tests for the LD youths are presented in Figure 1. This figure shows the percentage of steps performed correctly for each skill at each test session averaged over the

Insert Figure 1 about here

group of youths. Only those steps unique to each skill were included in this analysis. The skills were trained sequentially from giving positive feedback at the top of the figure to negotiation at the bottom of the figure. The figure shows that the youths had at least a 15% increase in

skill levels on the first test session after training for the skills, giving positive feedback, resisting peer pressure, and problem-solving. The skills, giving negative feedback, accepting negative feedback, and negotiation, were all trained in an additional session because of small increases in skill levels after the initial training session. The youth's level of the skills, except resisting peer pressure, maintained or increased following training.

The results of the behavioral role-play tests for the non-LD youths are shown in Figure 2. These results are similar to those of the LD youths with all skills except giving positive feedback and negotiation

Insert Figure 2 about here

showing gains of at least 15% immediately following the initial training session. LD youths showed a 15% gain in skill performance after the initial training session for three of the six skills while the non-LD youths showed a 15% increase on four of the six skills. One difference between these two groups is in the post-training level of the problem-solving skill. The LD youths performed the problem-solving after training at an average level of 59% whereas the non-LD youths performed the skill at an average level of 75%. The average post-training skill levels for all of the other skills were approximately the same for both groups. The skill level increases for non-LD youths were maintained or increased during the program for all skills except problem-solving and negotiation.

Figure 3 shows the results of the behavioral role-play tests for the court-adjudicated youths. This group of youths showed at least a 15% increase for all skills following training except giving negative

Insert Figure 3 about here

feedback which initially decreased then increased substantially after a second training session. This group, like the non-LD youths, showed significant increases in the problem-solving skill with an average post-training skill level of 78%. Their skill level increases for all skills were maintained throughout the training program.

The amount of generalization of skill components from a trained skill to an untrained skill was assessed by recording if a youth performed a skill component correctly following training of another skill that contained that component. For example, eye contact was a component of both giving positive feedback and giving negative feedback; giving positive feedback was trained first and generalization occurred if an increase in eye contact was exhibited in giving negative feedback. The number of instances in which this type of generalization of components could occur was very small because of the limited number of components similar across two skills. In addition, the number of instances in which generalization could be measured was further decreased because generalization could only be assessed if the youth had not performed the components correctly on the pretest. In the LD group there were four instances in which this generalization could occur, and generalization occurred four times. In the non-LD group, there were five instances in which generalization could occur, and generalization occurred four times.

During criterion performance, when the youths were required to perform the skill without the skill sheet, the number of trials required to perform the skill correctly was recorded. The LD youths had a mean number of trials to criterion of 2.26 and the non-LD group had a mean number of trials to criterion of 2.24.

Discussion

The results of this study showed that all three groups of youths acquired the social skills as a result of the group training program to the extent that they could generalize use of the skills to novel situations. The LD youths appeared to acquire the social skills at the same levels and at the same rate as the other youths. With the problem-solving skill, however, they performed at consistently lower levels than the other two groups of youths after training. They performed at a 59% level compared to 77% average performance for the other two groups. The data on the generalization of the skill components showed that both LD and non-LD youths were able to correctly perform skill components in an untrained skill after training of another skill which included that component. The data sample for this conclusion, however, was extremely small. Also, the data on the number of trials to criterion performance showed that the LD and non-LD youths acquired the skill at the same rate. Thus, the LD youths did not appear to need special or different training from the other youths on the social skills, whereas a different approach or more training may be required on the more cognitively oriented problem-solving skill.

These results lead to a number of conclusions. First, all three groups of youths showed uniformly low levels on the skill assessment instrument prior to training. The results of similar testing on a group

of "normal" youths is not available, but the present results suggest that youths who are labelled as "difficult" or "troublesome" youths (as all the youths in this study were) may have low levels of social skills and problem-solving skills regardless of whether they are classified as LD or non-LD. The low levels of their social skills may be one factor in these youths being labelled as "troublesome." There is no direct evidence on the relationship between skill deficits and such labelling, but it is possible that social skill deficits may lead to treatment intervention with a youth.

Second, the similarity of the three groups on their pretraining skill levels indicates that LD youths may not have special skill deficits beyond other youths who are experiencing adjustment difficulties. However, the present assessment instrument measured only six skills and there may be other social skill areas in which there are differences between the groups.

Third, all three groups of youths were able to acquire the social skills during the training program. The LD youths acquired the social skills to levels comparable to the other youths and at the same rate. This finding indicates that social skill training programs may benefit youths whether they are labelled LD, non-LD or JD.

Fourth, the LD youths learned the cognitive problem-solving skill to an average level of 59% compared to 75% and 78% for the non-LD and JD groups, respectively. This skill was a cognitive skill which required the generation and evaluation of alternative solutions. The finding that the LD youths did not acquire the skill to the same level as the other two groups may indicate that a specific discriminator of learning disabilities in adolescents is more related to cognitive processing

deficits than to general social skill deficits. Therefore, training programs aimed at teaching social skills of LD youths may not need to be different from programs developed for non-LD youths; however, in the area of cognitive skills, the LD youths may need more intensive or possibly different training programs. Abikoff (1979) examined a number of cognitive training programs for hyperactive and impulsive youths which showed gains in problem-solving skills. The development of a cognitive skill training program for LD youths may be a further refinement of existing programs.

These results replicate and extend the previous research completed regarding the social skills of LD adolescents. First, the results add weight to the conclusions of Deshler et al. (1980) that LD adolescents do not appear to be socially different from other adolescents who are having difficulty in school. Nevertheless, it appears that LD students do have some social skill deficits when the quality of their social interactions is analyzed as opposed to the quantity or frequency of their interactions. This research extends the realm of their social skill deficits beyond the occupational situations assessed by Mathews et al. (1980). These conclusions must be tempered, however, by the facts that our groups of youths were small and the LD group may not be representative of the LD population at large.

Since such social skill deficits could serve to further handicap LD adolescents in their daily lives, it appears important that remediation be provided them in the area of social skills. This remediation should probably be integrated within their school curriculum, and generalization outside the training program should be monitored to insure integration of the skills within the adolescents' behavioral repertoires. Further

research appears warranted in the incorporation of a social skills training program within programs serving LD secondary students and in the further identification of social skills deficits in LD adolescents. Only then can LD adolescents be assured of acquiring the social skills that will aid them in becoming successful in school and beyond.

Footnotes

¹ Prorated IQ scores for the students were obtained in the following manner. Due to time constraints, only two subtests of the WISC-R/WAIS were administered to the students--the Vocabulary and Block Design Subtests. These subtests were chosen because the scores resulting from combining these two subtests are highly correlated ($r = .91$) with the total test score (Sattler, 1974). To provide an estimate of each student's full scale IQ, the Vocabulary and Block Design scaled scores were combined and an estimate was made according to a procedure recommended by Tollegen and Briggs (1967). Tollegen and Briggs have identified shortcomings of both simple prorating and regression procedures for estimating fullrate IQ. They recommended, instead, the calculation of a deviation quotient ($M = 100$, $SD = 15$) which takes into consideration the number of subtests administered, the correlations between those subtests, and the total number of scaled score points obtained by the student. Their recommendations were followed in this study to obtain an estimated IQ score for each student.

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FIGURE CAPTIONS

- Figure 1. Percent of skill components performed correctly across six skills during baseline and after training, averaged across group members in the learning disabled group.
- Figure 2. Percent of skill components performed correctly across six skills during baseline and after training, averaged across group members in the non-learning disabled group.
- Figure 3. Percent of skill components performed correctly across six skills during baseline and after training, averaged across group members in the court-adjudicated group.

FIGURE 1

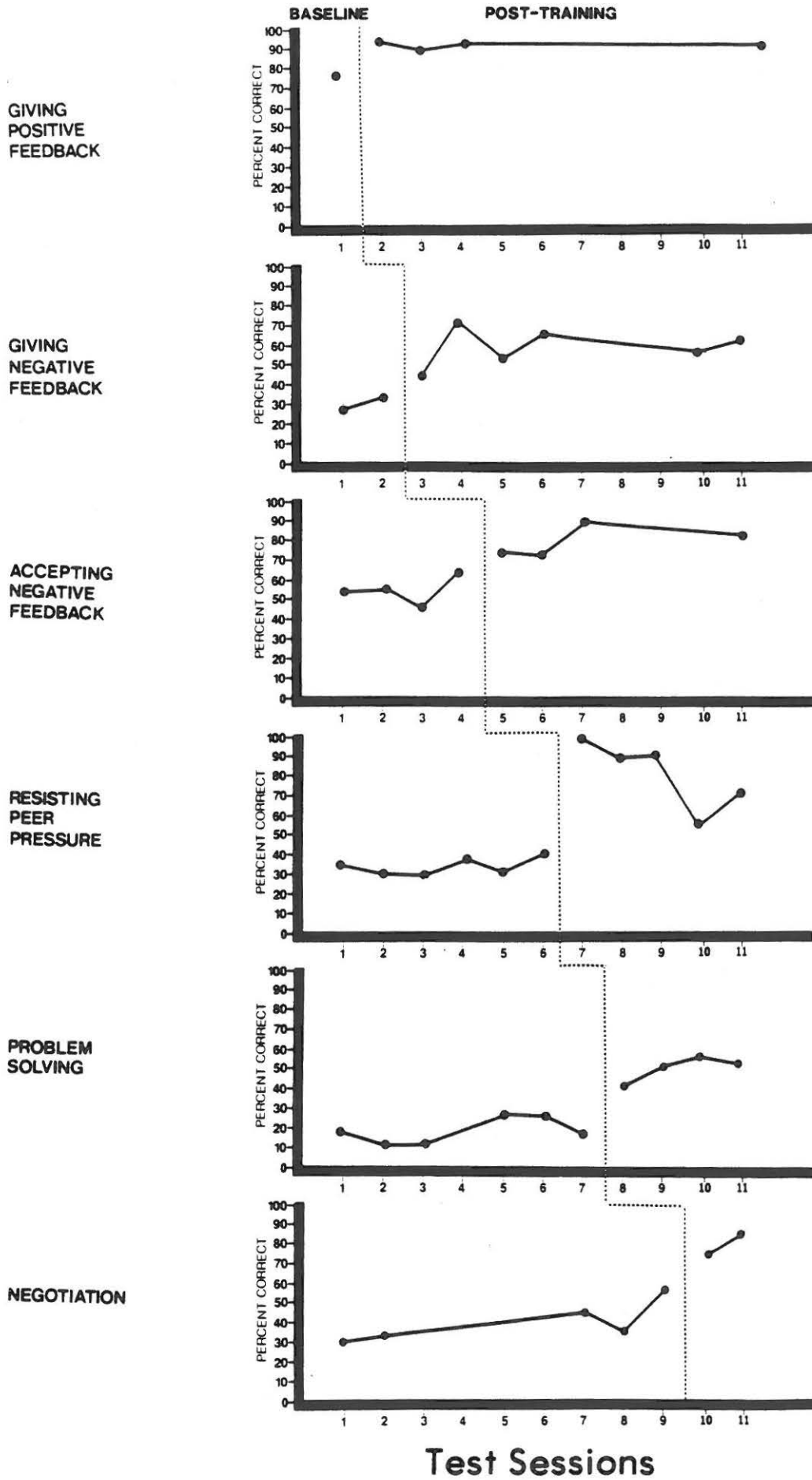


FIGURE 2

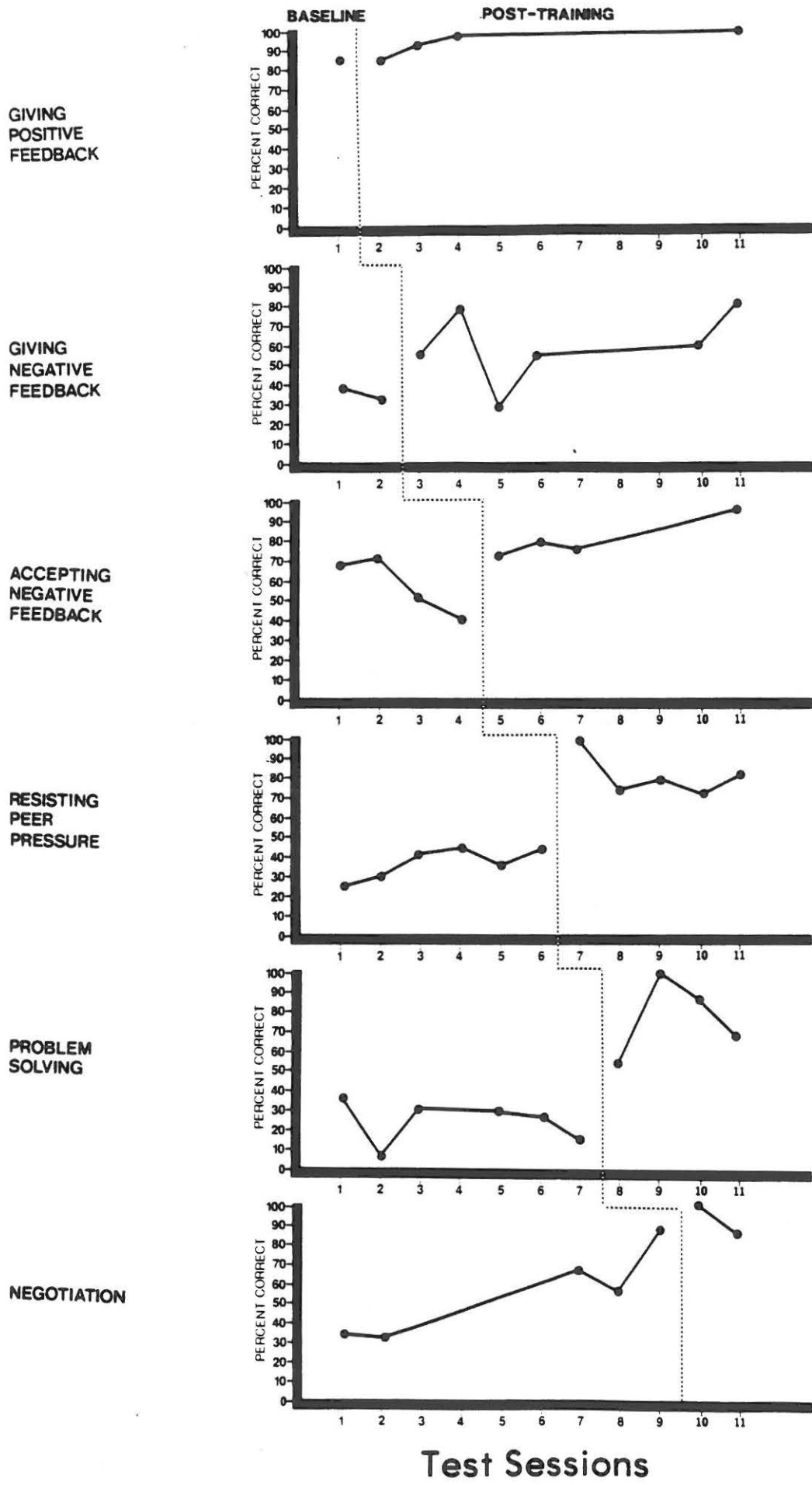


FIGURE 3

