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ABSTRACT

Ninety-two learning-disabled children, aged 5-13, participated in an evaluation of the efficacy of a television-based social problem-solving curriculum. The 52 children in the curriculum group viewed 10 episodes from the "Inside/Out" series and participated in teacher-led discussions. The episodes dealt with expressing feelings, making new friends, practical jokes, embarrassment, emotional abuse at home, responsibility at home, peer acceptance, coping with bullies, positive thinking, etc. The Teacher Blaming and Peer Inclusion subtests of the Social Problem Analysis Situation Measure were administered as pre-posttests. Other data were gathered through peer ratings, teacher ratings, and observation of problem-solving ability during an arts and crafts activity. The "Inside/Out" curriculum was not found to be an effective means of changing learning-disabled children's social problem-solving knowledge, peer relations, or behavior. The curriculum-group children were not rated as more popular or less aggressive than control-group children. Several suggestions for improving the curriculum are offered. (Author/JDD)

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Evaluation of a Television-Based Social Problem Solving
Curriculum for Learning Disabled Children

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Abstract

Ninety two learning disabled children, ranging in age from 5 to 13 years old, participated in an evaluation of the efficacy of a television-based social problem solving curriculum. The curriculum consisted of 10, 30-minute lessons administered over a 5-week period. Children in the curriculum group viewed a 15-minute episode from the Inside/Out series, and participated in a teacher-led discussion. Prior to and following the administration of the curriculum, children were tested using the Teacher Blaming and Peer Inclusion subtests of the Social Problem Analysis Situation Measure (SPASM). Peer ratings of popularity and aggression, as well as unbiased ratings of behavior, completed by the children's art, gym, and library teachers were also collected at pre- and posttesting. Children's behavior and problem solving ability during a structured arts and crafts activity at posttesting were coded by raters unaware of each child's treatment status. The Inside/Out curriculum was not found to be an effective means of changing LD children's social problem solving knowledge, peer relations, or behavior. Several suggestions for improving the curriculum were offered. Primary consideration in the development of future curricula should be given to remediating the LD child's problem in interpreting social events and the emotions associated with them. It is likely that these problems are significant contributors to the LD child's difficulty in developing and maintaining friendships. In

in addition, successful curricula should spend several lessons focusing on each skill in order for the skill to become integrated into the children's behavior.

Introduction

Learning disabled (LD) children often experience difficulties in their peer relations (Bryan, 1974, 1976; Green, Beck, Forehand, & Vosk, 1980). The importance of peer acceptance lies not only in its ongoing impact on the child's social development (Corsaro, 1981), but also in its association with later adjustment (e.g., Cowan, Pederson, Babigian, Izzo, & Trost, 1973; Stennet, 1968). In addition to predicting psychiatric disturbances, children who are rejected by their peers are also more likely than well accepted children to drop out of school (Ullman, 1957) and have trouble with the law (Janes, Hesselbrock, Meyers, & Penniman, 1979). Recognition of these facts has prompted investigations into the factors responsible for peer difficulties and the development of early intervention programs targeting such factors.

It has been suggested that one factor contributing to a child's difficulty in relationships is a social cognitive/knowledge deficit (D'Zurilla & Goldfried, 1971). This knowledge has been termed the child's "social problem solving skills." Spivack, Platt and Shure (1976) have described a number of such skills. These skills include (a) problem sensitivity (the ability to recognize the variety of possible problems that may be encountered within an interaction), (b) alternative thinking (the ability to generate different solutions to interpersonal problems), (c) means-ends thinking (the ability to detail the step by step means of reaching a solution to a problem), (d)

consequential thinking (the ability to consider the consequences of one's acts, both on oneself and others), and (e) causal thinking (the understanding of motivational factors in the actions of others as well as oneself). An individual who has difficulty in any one of these social problem solving skills may encounter obstacles in maintaining a satisfactory relationship with others. The assumption underlying much of this research is that if specific social cognitive deficits can be identified and remediated, a child's interactions and subsequent acceptance should be enhanced.

Interventions designed to teach social problem solving skills have utilized a variety of techniques including role-playing discussions, worksheets, and selected films or television shows. Television is an excellent educational tool for working with LD children because it holds their attention and interest, which is often limited, and can present social situations that can be used in discussions of problem solving strategies (Elias, 1983). The similarity of the dialogue used in television to everyday interactions further facilitates the children's ability to understand and learn from the social situations depicted. In addition, a television-based curriculum is not dependent on reading abilities, and because children enjoy watching television, there are also fewer problems in getting children to participate in the treatment program. Furthermore, the ability of television to influence behavior has been amply demonstrated (see Comstock, Katzman, McCombs, & Roberts, 1978). More specifically, television

has the power to teach new behavior through modeling, change attitudes toward the desirability of certain behaviors through its presentation of consequences, and arouse an individual to action.

Elias (1978, 1983) assessed the impact of a media-based social skills curriculum on 109 emotionally disturbed boys in a residential facility. Ten episodes from the educational television series Inside/Out (broadcast on public television stations) were used in combination with a teacher-led discussion. Children in the experimental condition viewed the program twice a week for 5 weeks. Episodes selected presented children coping with problems such as teasing, making friends, and bullying. The results indicated that children in the experimental condition showed increases in teacher rated self-control and peer-rated popularity and decreases in social isolation. Follow-up 2 months later found these children to be significantly less socially isolated and emotionally detached and more able to delay gratification than children in the no-treatment control group.

In her dissertation, Salvador (1982) attempted to replicate results reported by Elias (1978, 1983). One hundred and twenty emotionally disturbed boys, ranging in age from 7 to 14 years participated in the curriculum evaluation. She reported that the Inside/Out plus discussion curriculum was not effective in improving prosocial behavior, or in improving social problem solving skills. In fact, one of the four groups receiving the curriculum had a significant increase ($p < .01$) in conduct problems as measured by the Becker Bipolar Adjective Checklist. Salvador

hypothesized that the programs, which encourage the expression of feelings, may have led to the acting out of negative feelings in the relatively nonverbal ED boys.

Because Elias was able to demonstrate the effectiveness of a television-based social skills curriculum with emotionally disturbed children, this suggested that similar results could be obtained with another population that also has serious social skills deficits, namely, LD children. Recognizing the difficulty Salvador had in replicating Elias' work, the Inside/Out curriculum used in the present study was expanded to include a more comprehensive discussion.

The objective of the present study was to evaluate the effectiveness of a television-based social problem solving skills curriculum on LD children. It was expected that children receiving the curriculum would improve in social problem solving ability and in classroom behavior. It was further expected that children receiving the curriculum would be rated by their classmates as more popular and less aggressive, than children in a no-treatment control condition at posttesting.

Method

Subjects

Thirteen classes of LD children, ranging in age from 5 to 13 years old, participated in the study. The children were students attending a public elementary school for LD students. As a result of a presentation of the study to the faculty, eight teachers

(representing a total of 52 children) expressed an interest in using the curriculum in their classes. Although random assignment of these classes to curriculum and control conditions was considered, in order to increase the sample size and have a control group containing children of approximately the same age level, teachers in five additional classes ($n = 40$) were asked if they would allow their classes to serve as a control group. Upon completion of the study, one of the control teachers asked for and presented the curriculum to her class.

The treatment and control groups were matched on age ($M_s = 106.8$ and 106.9 months respectively, $p > .05$) and IQ ($M_s = 81.8$ and 85.7 , respectively, $p > .05$). To achieve the matching, children whose IQs were below 60 ($n = 6$) or above 111 ($n = 3$), were not included in the data analysis.

The final sample consisted of 92 children, ranging in age from 5 years and 3 months, to 13.0 years. Forty-five children (27 boys; 18 girls) formed the curriculum group. The control group consisted of 47 children (34 boys; 13 girls). The racial composition of the sample was 89% White, 5% Black, 5% Hispanic and 1% Asian.

The equivalence of the curriculum and control groups on each of the pretest measures was evaluated. No significant differences were found on the social problem solving measures, teacher ratings of behavior or peer ratings of aggression. A significant difference was observed, however, on the peer ratings of popularity, $F(1,90) = 20.7$, $p < .001$. Examination of the means

revealed that children in the curriculum group rated each other higher on the popularity items than children in the control group.

Curriculum

The Inside/Out episodes selected for the curriculum had been used previously with some success by Elias (1983). Each of the 10 lessons in the curriculum was designed to target a different but potentially difficult social situation. The open-ended Inside/Out episodes served as starting points for discussions of what to do when faced with a similar situation. Lesson 1, "How Do You Show?", portrayed children in a variety of situations, expressing different feelings. Children were encouraged to identify the feelings presented and to talk about how they express their own feelings. In Lesson 2, "Lost Is A Feeling", a boy moves and has to learn how to make new friends. The discussion focused on how it feels to move and what a person can do to make new friends. Lesson 3, "Just Joking", showed a boy who liked to play practical jokes on others and the potential consequences of the jokes. In Lesson 4, "But They Might Laugh", the problem of being embarrassed was dealt with. The show featured a young girl who pretends she has hurt her knee in order to avoid going skating. Lesson 5, "Home Sweet Home", presented the problem of emotional abuse at home. The discussion centered on ways of getting help from parents and others to cope with such a problem. Lesson 6, "Must I?/May I?", featured one child who had too much responsibility at home and another child who had too little responsibility. This lesson concentrated on ways of getting more responsibilities at

home and at school and handling the responsibilities given. Lesson 7, "I Dare You", dealt with the problem of being dared to do something in order to be accepted by the group. Lesson 8, "Getting Even", portrayed a group of children who start off being friends but get mad at each other when a part of the group feels left out. The consequences of "getting even" and different ways of making up are discussed. Lesson 9, "Bully", depicts a boy who constantly picks on others. Children discussed various ways of coping with a bully. Lesson 10, "Yes, I Can", featured a young boy who wants to convince others that he is ready to handle solo camping. This final lesson centered on not giving up when things are difficult.

The children's regular classroom teacher led the discussion following each show. Teachers were provided with a one-page summary of each episode taken from Inside/Out: A Guide for Teachers (National Instructional Television (NIT), 1973) and a set of discussion questions for each lesson. Discussion questions were taken from the guide book provided by NIT, Using Inside/Out As An Affective Education and Social Problem Solving Thinking Program Revised Edition (Elias & Salvador, 1980), and those generated by the author.

Both the curriculum as a whole, and the individual lessons, were developed within the framework of the basic steps in problem solving. For example, the lessons progressed from identifying the feelings of others, to considering the consequences of actions, to taking personal responsibility in handling problem situations. The

following types of questions were asked after each episode: (a) what happened to the children in the show? (b) what was the child's/children's problem? (c) how did the child or children feel? (d) what might happen next? (e) what different things could the child/children try to resolve the problem? and (f) suppose a suggested strategy did not work, what else could the child/children try?

Measures

Each child was tested on two subtests from the Social Problem Situation Analysis Measure (SPASM). For pretest assessment the two problems the children were asked to solve were: (a) a child is left out of a baseball game and wants to play (Peer Inclusion subtest), and (b) a child is unjustly blamed for pushing another child (Teacher Blaming subtest). At posttest assessment the SPASM subtests dealt with a child who is left out of a board game and a child who is unjustly blamed for pulling someone's hair. The order of the subtests was counterbalanced. The focal child in both subtests was the same sex as the child being tested. After the first subtest, the children completed a peer rating of aggression, and popularity, and then the second SPASM subtest.

The children's behavior was rated by their gym, art and library teacher both before and after the curriculum using the Child Behavior Rating Scale developed by Elias (1983). This scale rates the frequency of cooperative behavior, visible depression, temper tantrums, disruptive behavior, and overt reactions to minor annoyances.

In order to better assess the relationship between children's social problem solving ability and their actual behavior, following the completion of the curriculum the children were videotaped while participating in an experimenter designed, structured arts and crafts activity. The arts and crafts activity involved the children in creating a poster from one of three sets of pictures. The children were told that they should select a leader and a poster topic, and a picture. A limited number of pictures, crayons, scissors and glue were available. Videotapes of the activity were evaluated using the Code of Observing Social Activity (COSA: Sprafkin, Grayson, & Gadow, 1983) with the addition of "on task" behavior as a behavior category. The COSA is an adaptation of a code used previously (Sprafkin & Rubinstein, 1982) and has been employed to evaluate the effects of television viewing on handicapped children (Sprafkin, Gadow, & Grayson, 1987). Approximately 30% of the children were randomly selected to be coded twice to assess inter-observer reliability. The second rater coded the child independently of the primary observer. Cohen's Kappas on each of the six behaviors were as follows: physical aggression = .80, nonphysical aggression = .79, noncompliance = .83, immature behavior = .82, socially appropriate behavior = .78, and on task behavior = .91.

In addition to scoring the children's social behavior, each child's ability to deal effectively with the problems presented to them in the activity was rated using the manual written by Martin (1985). Ratings were done separately on each potentially

problematic situation. Cohen's Kappas were as follows: deciding on a leader = .87, picking a poster topic = .79, selecting a picture = .91, sharing supplies = .77, and obtaining supplies = .72.

Attention to each program was measured using the procedure employed by Friedrich and Stein (1973). The observer listed each child's name on an attention rating sheet, and using a stopwatch, observed one child for 10 seconds and proceeded to the next child on the list. Children received a ✓ if they met all three of the following criteria: (a) child's head and eyes were directed toward the screen during most of the interval, (b) child does not talk or disturb another child, and (c) no gross movements of arms or legs. Children who did not meet all three criteria were given a "0" for that interval. The observer watched children successively until the program was over.

Each discussion was timed and individual participation noted. Children's names were listed on a rating sheet and an observer marked: "FR" (Free Response) when the child volunteered an answer or comment, "CR" (Called on Response) if the child was called on and answered the question, and "NR" (No Response) if the child was called on and refused to answer or said, "I don't know." Children's actual answers were written down when possible.

Procedure

Experimental setting and equipment. 10 (15-minute) episodes of Inside/Out were selected for the curriculum. The programs were presented to the children in their own classroom using a General

Electric VHS Videocassette Recorder and a 19-inch portable color television. The arts and crafts activity was videotaped using a JVC color video Camera (model GX-N70U) mounted on a tripod.

Research personnel. Six undergraduate psychology students and one graduate student (five females and two males) served as research assistants. The undergraduate assistants were kept "blind" to the treatment status of the children and administered and scored both the pre- and posttest portions of the social problem solving measure. The graduate assistant and the first author administered the curriculum to the treatment classes.

Results

The effectiveness of the curriculum in teaching social problem solving skills was evaluated using posttest only SPASM scores. This was done because the correlations between the control group's pre- and posttest SPASM scores were low and none were statistically significant. Although the equivalence of the curriculum and control groups was established on the pretest form of the SPASM, it can not be assumed without reservation, that the groups were comparable at pretesting on the skills measured by the posttest SPASM.

The children's orientation to the problem was evaluated for understanding of the problem, awareness of feelings, sensitivity for others, and initiative and expected outcome both before and after an imposed obstacle. A MANOVA on these posttest scores variables for the Teacher Blaming subtest yielded marginal significance, $F(7,79) = 2.10, p < .06$. Subsequent univariate F

tests revealed one significant effect, that of understanding of the problem (Item #1), $F(1,85) = 2.10$, $p < .01$. Examination of the means indicated that the control group ($M = 5.4$) scored higher than the curriculum group ($M = 4.6$).

Although a subsequent MANOVA performed separately on the younger children was not significant, a significant effect was observed for the older children, $F(7,24) = 3.11$, $p < .05$. A series of univariate F tests resulted in two significant effects, that of understanding of the problem (Item #1), $F(1,30) = 6.82$, $p < .05$, and primary outcome (Item #4), $F(1,30) = 4.44$, $p < .05$. The control group scored higher than the curriculum group on both understanding of the problem ($M_s = 6.0$ and 5.4 , respectively) and primary outcome ($M_s = 4.6$ and 2.9 , respectively).

A parallel analysis (MANOVA) was conducted on the orientation to the problem situation variables on the Peer Inclusion subtest. This did not reveal any significant effects of treatment. Nor were significant differences observed for analyses conducted separately on the younger, and older children.

Children's responses on the means-end cognition variables were scored with respect to the presence of alternative strategies, potential consequences of strategies, the number of steps considered, and the anticipation of potential obstacles. These variables, for both the primary and obstacle resolution strategies, formed a means-end problem solving score. A MANOVA on posttest scores did not result in any significant differences for either the Peer Inclusion or the Teacher Blaming subtest. Separate

analyses conducted on the younger and older children on the posttest scores for both subtests also resulted in no significant differences. The MANOVA for the younger children on the Teacher Blaming subtest yielded marginal significance, $F(6,48) = 2.07$, $p = .08$. Univariate F tests performed on each of the variables did not result in any significant ($p > .05$) differences.

The strategies generated for dealing with the problem situations were rated with regard to their potential effectiveness on a scale of 0 to 9 (Elias, 1980). Posttest comparisons of the quality of strategies generated by the two groups were conducted using a series of Mann-Whitney U Tests. No significant differences ($p > .05$) were observed for either the Peer Inclusion or the Teacher Blaming subtest. This remained true for both types of problems when separate analyses were conducted on the younger and older children.

In addition to evaluating the overall quality of strategies generated, the groups were compared on the degree to which they offered adaptive and maladaptive strategies. Adaptive strategies included confrontation, support seeking, direct discussion, mutual compromise, and stopping to think. Maladaptive strategies included uncertainty, aggression, pestering, and wishful resolution. For each SPASM subtest (Teacher Blaming and Peer Inclusion), five solution strategies were evaluated. A series of Chi Square tests were performed on the frequency of adaptive and maladaptive strategies suggested for each opportunity. No significant differences were found for either the Teacher Blaming

or the Peer Inclusion subtest.

Chi Square analyses conducted separately on the younger and older children revealed only one significant effect, $\chi^2(1, N = 53) = 4.34, p < .05$). This difference was observed on the younger children's first strategy generated in dealing with the peer inclusion problem at posttesting. Examination of the number of adaptive strategies for both groups indicated that the younger children receiving the curriculum generated adaptive strategies 21.4% of the time, and children who did not receive the curriculum generated adaptive strategies 48.1% of the time. It should be noted, however, that this finding was the only difference resulting from conducting 30 Chi Square tests, and for that reason, is probably spurious.

Peer Ratings

Because the curriculum and control children's peer ratings of popularity were significantly different at pretesting, changes in peer rated popularity were assessed using a paired t test on each of the groups separately. These analyses did not yield any significant changes in popularity for the curriculum group. The control group rated one another significantly higher in popularity at posttesting than at pretesting, $t(45) = 2.54, p < .05$. The control group's popularity ratings, however, still remained below the curriculum group's ratings at posttesting.

Analyses conducted separately on the younger children's popularity ratings yielded the same results as those conducted with the entire sample. Children in the control group rated each

other significantly higher at posttesting than at pretesting, $t(28) = 2.97, p < .01$). No significant changes were found for the curriculum group's ratings of popularity.

Changes in peer popularity for the older children indicated a significant treatment effect. The older children who received the curriculum rated one another as more popular at posttesting, $t(15) = 2.27, p < .05$. No changes were observed in the control group's popularity ratings.

A significant effect of time was found on children's ratings of aggressiveness, $t(1,89) = 19.38, p < .001$. At posttesting, children in both conditions rated each other as more aggressive than they had at pretesting. This time effect held true for both groups when the younger and the older children were looked at separately.

Behavior Ratings

For the purpose of reducing the number of dependent variables, a factor analysis was conducted on the behavior rating scales completed by the gym, art, and library teachers. Four scales (Prosocial, Antisocial, Depression and Emotionality) were formed on the basis of the factor loadings of the items. Because one item, expresses a lack of confidence, did not load heavily with any of the other items consistently across teachers, it was analyzed as a separate variable.

The Pearson intercorrelations between the gym, art and library teachers' ratings were nonsignificant for the Emotionality index, nonsignificant or low for the Depression index and moderate

for the Prosocial and Antisocial indices. Correlations between the teachers on the lacks of confidence item was nonsignificant for each of the teacher pairs. Because the intercorrelations on the four indices and the lacks confidence item were not high, each teacher's ratings were analyzed separately.

A separate MANOVA with repeated measured was performed for each of the three teachers' behavioral ratings. No significant main effects of treatment condition or interaction of Item x Time x Condition, respectively, were observed for either the art, gym or library, teacher's ratings.

Subsequent analyses conducted separately on the older children revealed a significant Item x Time x Condition effect on ratings completed by both the gym, $F(4,27) = 2.75$, $p < .05$, and the library $F(4,26) = 5.33$, $p < .01$ teachers. Univariate F tests conducted on each of the individual indices completed by the gym teacher yielded a significant effect of time on both the Prosocial index, $F(1,3) = 10.12$, $p < .01$, and the Emotionality index, $F(1,34) = 5.93$, $p < .05$. Children, regardless of condition, were rated as less prosocial and more emotional at posttesting.

Because the overall MANOVA on the library teacher's behavioral ratings of the older children, revealed a significant interaction, a series of univariate F tests was performed on each of the individual indices. A significant Time x Condition interaction was observed for the Prosocial index, $F(1,33) = 9.74$, $p < .01$. A Newman-Keuls test revealed that the curriculum and control groups were not significantly different at pretesting. The

curriculum group at posttesting ($M = 2.7$), however, was rated significantly ($p < .05$) more prosocial than the control group at posttesting ($M = 2.2$), or either group at pretesting.

A time x Condition interaction was also observed on the library teacher's ratings of Emotionality. $F(1,33) = 10.93$, $p < .01$.

Pair-wise comparisons using the Newman-Keuls test did not yield any significant ($p < .05$) differences. A significant time effect was observed on the Depression index, $F(1,33) = 20.61$, $p < .001$. Examination of the means indicated that children in both groups were rated as more depressed (Curriculum $M_s = .00$ and $.26$; Control $M_s = .13$ and $.24$) from pretesting to posttesting, respectively. Because the rating scale was designed to have scores ranging from 0 to 3, this increase in depression is of little clinical significance.

A series of MANOVAs with repeated measures was conducted separately for the younger children, on the art, gym, and library teacher's behavioral ratings. Although no significant effects were observed for the art and library ratings, a significant effect of condition was found on the gym teacher's ratings, $F(1,45) = 5.08$, $p < .05$. Univariate F tests performed on the gym teacher's ratings for each of the individual indices resulted in a significant time effect on the Prosocial index $F(1,49) = 15.42$, $p < .001$, and the Emotionality index, $F(1,49) = 8.02$, $p < .05$. Children were rated as less prosocial and less emotional at posttesting.

Observed Social Behavior and Problem Solving

Children's scores for each of the six behavior categories was based on the percentage of intervals that each behavior was observed. Table 1 presents the untransformed means for each of the behaviors for the treatment and control condition. Because the frequency of zero scores was high for some behaviors, the data were analyzed using transformed scores, i.e., $\sqrt{x} + \sqrt{x + 1}$ (Kirk, 1968).

A MANOVA entering all six behavior categories yielded a significant main effect for condition, $F(7,46) = 2.45$, $p < .05$. Children in the control group displayed significantly more immature behavior ($M = 2.93$) than children receiving the curriculum ($M = .56$), $F(1,52) = 4.43$, $p < .05$. In addition a marginally significant difference was found for both physical aggression, $F(1,52) = 3.43$, $p = .07$, and nonphysical aggression, $F(1,52) = 3.86$, $p = .06$. As shown in Table 1, the control group was more physically and nonphysically aggressive than the curriculum group.

The children's behavior was also rated with regard to its effectiveness in solving specific problems. A Mann-Whitney U test revealed that the curriculum group shared significantly more than the control group. No significant differences were observed on children's ability to decide on a leader, poster, or picture, or their ability to obtain supplies.

TV Attention and Discussion Sessions

The percent attention scores were averaged over the 10 lessons and across all participating classes. This resulted in an

average attention score of 95%. The average attention scores for individual lessons, combining classes, ranged between 88% and 98%. The younger and the older children were equally attentive ($M_s = 95$ and 94.72 , respectively), and no class averaged below 90% on their attention to the entire curriculum.

The children spent an average of 12.5 minutes in discussion following each Inside/Out episode. The older children spent significantly more time in discussion ($M = 13.6$ minutes) than the younger children ($M = 11.1$ minutes, $t(18) = 3.78$, $p < .05$). Average participation within a class for the ten lessons was calculated using the following formula:

$$\frac{\text{Free + Called on Responses}}{(\# \text{ Children} \times 10) - \# \text{ Absences}}$$

Average participation ranged between 2 and 6.5 responses per child per discussion with a mean of 5. Over 90% of the children participated at least once in each discussion. No child averaged less than 1 response per lesson.

Child Characteristics

Because cognitive deficits of the LD children may explain, in part, the ineffectiveness of the curriculum in influencing the type of strategies generated or the children's behavior, median split analyses using IQ were conducted. A series of Mann-Whitney U tests on the strategies generated at posttesting for both subtests performed separately for children whose IQs were above and below the median (IQ = 83), did not yield any significant differences between the groups.

Median split analyses were conducted separately on each of the three teachers' ratings of behavior. The MANOVAs for the gym and library teachers did not yield any significant Time x Condition, or Time x Item x Condition interactions. A significant Time x Condition interaction, $F(1,42) = 6.56, p < .05$, was found for the art teacher's ratings when only children whose IQs were above 83 were included in the analysis. Subsequent univariate F tests yielded a significant time effect on the Emotionality index $F(1,42) = 4.12, p < .05$. Examination of the means indicated that both groups were rated as less emotional at posttesting. A significant Time x Condition interaction, $F(1,42) = 5.47, p < .05$, was observed on the Depression index. The means indicated the curriculum children were rated as slightly more depressed from pretesting to posttesting, ($M_s = .50$ and $.65$, respectively) and the control children were rated as slightly less depressed ($M = .50$ and $.27$, respectively). The Newman-Keuls test did not reveal any significant pairwise differences.

The possibility that existing social skills deficits affected the children's response to the curriculum was explored through median split analyses using popularity at pretesting. Unfortunately, these analyses also failed to reveal any differential effectiveness of the curriculum. Thus, regardless of whether cognitive or social skill deficits were considered in the analyses, the curriculum remained largely ineffective.

Discussion

Although the curriculum was well received by the children in

terms of their attention to the shows and their participation in the discussions, it was not effective in improving their social problem solving ability or adjustment. A few significant effects were observed for some of the SPASM variables; however, there was no consistent pattern to these effects. Additional analyses conducted on the older and younger children separately did not reveal a differential treatment effect based on age.

The curriculum was also evaluated with respect to changes in peer relations. It was expected that children who received the curriculum would be rated as more popular and less aggressive than children in the control group. Neither of these hypotheses were supported when the entire sample was included in the analyses. In fact, the control group (but not the curriculum group) rated each other as more popular at posttesting than at pretesting.

A significant treatment effect was observed for the older children on the peer ratings of popularity. Older children who received the curriculum gave each other higher ratings at posttesting than at pretesting. No change was observed for the older children in the control group. The opposite result was observed for analyses conducted with the younger children. For them, the control group gave one another higher ratings of popularity at posttesting, but no change was observed for the curriculum group. Although it would be expected that the curriculum, which was designed for 9-to-11 year old children, would be more effective with the older age group, the significance of the change in popularity ratings in the predicted direction for

the older children is dampened by results in the opposite direction for the younger children. Furthermore, changes in a positive direction were not observed for the older children on the ratings of aggression.

Analysis of aggression ratings revealed that the children in both groups rated each other more aggressive at posttesting than at pretesting. Separate analyses conducted with the younger and older children did not reveal any significant treatment effects and generally repeated what was observed for the sample as a whole. This lack of findings should be qualified, however, because all the children in a class received the curriculum and the peer ratings were completed only on classmates. It is possible that real changes in social behavior may have occurred, but the relative status of a child within a class to have remained the same.

The teacher ratings did not provide any evidence of significant changes in the children's behavior when the entire sample was included in the evaluation. Analyses conducted on the older children resulted in only one meaningful treatment effect (the library teacher rated the older children who received the curriculum to be more prosocial at posttesting than the curriculum group at pretesting, or the control group at either time of testing).

The art and gym teachers did not provide similar pictures of the older children with respect to the prosocial and emotionality scales. The gym teacher rated children in both conditions as less

prosocial and more emotional at posttesting. The art teacher observed no significant changes on either scale. Such results suggest that the changes in prosocial behavior and emotionality observed by the library teacher were either specific to that setting, or a result of the number of analyses conducted.

The final means of evaluating the curriculum was analysis of the observed behavior during the structured arts and crafts activity. The results of the observation provide modest support for the effectiveness of the curriculum. The control children displayed significantly more immature behavior and tended to display more physical and nonphysical aggression than the curriculum children. Although these results are encouraging, several qualifications should be noted. First, limited teacher interest in the study precluded random assignment to curriculum and control conditions. Second, the equivalence of the groups on this measure was not established because the activity was conducted only at posttesting. It is possible that observed differences between the groups were the result of existing differences between the groups. The reader will recall that the curriculum group rated one another more favorably at pretesting, than the control group. Finally, while significant effects were found on immature behavior, the level of immature behavior was low for both the curriculum and control conditions. Thus, the cumulative results of the arts and crafts activity should be viewed only as suggestive of a possible treatment effect.

The results of this study prompted a closer examination of

previous studies that have used Inside/Out as a basis for a curriculum. Elias (1978, 1983) reported positive results using Inside/Out plus discussion with ED boys. Several criticisms however, can be raised regarding that study. Of primary concern is that the teachers who completed the behavior ratings were not blind to the treatment status of the children. A bias may have been in effect despite the fact that the Devereaux Rating Scale was administered semiannually at the children's school and was not viewed as related to the evaluation of the curriculum. An additional caution in interpreting the results is that the observed changes were modest. Statistically significant ($p < .05$), positive treatment effects were found on only three of the nine Child Behavior Factors on the Devereaux. Correlated t tests, conducted on each of the 10 items on the Child Behavior Rating Scale also resulted in only three significant differences. Specifically, curriculum children were viewed by their teachers as having improved in their ability to control their temper, handle pressure, and not become visibly upset over minor annoyances. There was no change in aggressive behavior, and the reported increase in popularity for the children receiving the curriculum was only marginally significant, $p < .07$. Furthermore, although Elias refers to the treatment as a television-based social problem solving curriculum, no measures of social problem solving skills were included.

The curriculum used in the present study was essentially the curriculum used previously by Elias (1978, 1983) and Salvador

(1982) with an expanded set of discussion questions to address particular social problem solving skills. Possible explanations for its questionable efficacy for this population are: (a) the shows often modeled antisocial behavior, (b) the program stories were never resolved, (c) the curriculum did not give the children the opportunity to practice any of the behavioral strategies suggested during the discussion, and (d) the curriculum attempted to cover too many concepts in a very brief amount of time.

Additionally, characteristics specific to the more seriously LD children (i.e., those in self-contained classes in special schools) may have contributed to the ineffectiveness of the curriculum. For example, comprehension difficulties became more apparent during several of the discussions. Some children had difficulty recognizing the emotions of various characters in the shows. In the episode But They Might Laugh, a girl falls down skating and is embarrassed because the other children laugh at her. Several children believed that the girl felt "glad" when she fell down. The fact that some LD children have difficulty in recognizing emotions has been reported previously (Wiig & Harris, 1974). Some LD children also appear to be less able to predict which emotion another child would experience in different situations (Bachara, 1976). This limitation may handicap the development of other social skills. For example, a child who has difficulty predicting the emotional reactions of others to his/her behavior may not restrain his/her aggressive impulses.

The LD children's comprehension problem was further

compounded by limitations in their own social experience. For example, in the lesson Getting Even, children who start out as friends become mad at one another when some of the children leave the others out of making a club house. The LD children had difficulty understanding the feelings associated with being left out. Apparently many of the children never had good friends who could hurt them by leaving them out. It might be noted that several of the children commented during the course of the discussion that they did not have friends outside of school.

Given the importance of social skills in the development and maintenance of friendships the need for the development of future curricula targeting such skills is clear. Curricula designed for LD children must recognize and address these children's difficulty in interpreting social events and the emotions associated with them. In addition, LD children need to be given not only an understanding of what to do in a problem situation, but how to implement the strategies effectively. Finally, the children need plenty of practice on each skill before it becomes a part of their repertoire. Curricula which attempt a large variety of skills over a brief period are likely to be ineffective.

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TABLE 1

Mean Percentage of Intervals of Behavior Categories

Behavior	Condition	
	Curriculum	Control
Physical aggression	.26	1.26
Nonphysical aggression	1.49	5.23
Noncompliance	.05	.33
Immature behavior	.56	2.93
Socially appropriate behavior	34.31	25.14
On task behavior	59.32	58.21