

Teaching Children School Success Skills

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ABSTRACT Numerous studies have identified attending skills, listening skills, and social skills as being most predictive of long-term school success. A curriculum focusing on those critical learning-social skills was evaluated in 10 preschool classrooms, including 145 children 4 and 5 years of age. Teachers used 5 strategies to teach the learning-social skills. Embedding the strategies systematically into the curriculum by the regular classroom teacher is the unique feature of the approach studied. Children in the 5 treatment classes showed significant gains in attending behavior, listening skills, and behavior rating compared with children in the 5 comparison classrooms. Integrating the systematic teaching of those school success skills into the regular curriculum appears to significantly increase students' performance.

A research project involving 4- and 5-year-olds and a curriculum designed to teach learning skills and social skills associated with long-term school success is described. The project was implemented in three inner-city schools during September 1991 through April 1992. One of the central goals of the schools participating in this project was to enhance children's school readiness by focusing on social and cognitive competence. In recent reviews of the research literature, social and cognitive competence was found to have a strong positive correlation with positive peer relations and academic achievement (Bushweller, 1995; Eisenberg et al., 1997; Masten & Coatworth, 1998; Wemer, 1996; Zimmerman & Arunkumar, 1994).

Over the last 30 years, researchers have consistently reported that applied learning skills such as listening, attending, following directions, and cognitive strategies, as well as social skills (working-playing cooperatively with others and forming and maintaining friendships), are essential for school success (Cartledge & Milburn, 1978; Masten & Coatworth, 1998; Meyers, Atwell, & Orpet, 1968; Raver, Cybele, & Zigler, 1991; Travers & Light, 1982; Wang, Haertel, & Walberg, 1994; Zigler & Rescorla, 1985). A growing body of research indicates that children who enter

public school without minimal social skills are at a great risk of school failure and of eventually dropping out (Katz, 1986; Masten & Coatworth; Newcomb, Bukowski, & Pattee, 1993). Caine and Caine (1991), in their review of brain research on how humans learn and the implications for teaching, stressed the interconnections between the social, emotional, and cognitive domains. Raver, Cybele, and Zigler (1991) concluded that the concern for the child as a whole person must be reflected in the evaluative measures and curricula used by early childhood programs.

On the basis of the current knowledge base, one should not be surprised to find that the research literature has emphasized the need for more classroom instruction in learning skills and social skills (Brigman, 1991; Cartledge & Milburn, 1978; Masten & Coatworth, 1998; Shaw, 1986; Wang, Hartel, & Walberg, 1994). Successful strategies for teaching those critical skills, as well as their impact on increasing school success for children, also have been researched widely (Cobb, 1970; Fad, 1990; Ladd & Mize, 1983; Morrow, 1985; Slavin, Karweit, & Maden, 1989; Strother, 1987; Wooster & Carson, 1982). Most of that research has involved individual or small-group pull-out interventions versus whole-classroom instruction.

Although the importance of providing instruction in learning skills and social skills has been documented, and the strategies for teaching them have been reported, the problem of children lacking the skills persists. Almost 20 years ago, teachers cited the lack of prerequisite learning skills (including social skills) as the main reason for poor early school performance (Cartledge & Milburn, 1978). Similarly, a Carnegie Foundation (1992) survey of 7,000 kindergarten teachers reported that teachers estimated that 35% of the nation's children are not prepared to enter school. The survey suggests a gap between research and practice.

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The program under evaluation in this study attempted to translate what is known about helping children develop the skills needed for school success into practice. Our purpose in this study was to determine the effects of a particular curriculum, Ready To Learn (RTL), which focuses on teaching children ages 4–5 years a combination of learning skills and social skills in the regular classroom by the regular classroom teacher. The program being studied was based on integrating learning skills and social skills into the regular curriculum through the use of stories and five teacher strategies. The uniqueness of this study involves three components: (a) the systematic approach to teaching the critical skills in the regular classroom, (b) the teaching of both social skills and learning skills, and (c) the use of a format that can be integrated easily into the ongoing curriculum.

Embedding the teaching of those skills within the existing curriculum is one of the keys for providing that students receive enough practice for skill development. The model used for teaching the targeted learning and social skills uses a tell, show, do, and coach approach that includes systematic sequencing of lessons including review, demonstration, guided practice, corrective and supportive feedback, and independent practice. In their review of 50 years of research, "What Helps Students Learn," Wang, Haertel, and Walberg (1994) found that this teaching approach is the most effective mode of instruction.

Method

Participants

One hundred forty-five 4- and 5-year-old children in 10 classrooms at three preschool centers were involved in this project. Five classes were randomly selected to use the RTL materials. The other five classes were comparison classes. Children in all 10 classes were assigned randomly. All three centers are in an urban area, are within 5 miles of each other, and have similar populations. There were approximately equal numbers of boys and girls in both treatment and comparison classes. For all classes, the ethnic make-up was approximately 95% Black and 5% White. Each class had approximately equal numbers of children, a certified preschool teacher, and a teacher's assistant. The treatment group teachers and the comparison group teachers had similar years of experience and training. Any differences between groups at the beginning of the study were controlled for by the statistical analysis on the data (multivariate analysis of variance).

RTL Program

The RTL program focuses on the skills cited most frequently in the research literature as predictors of long-term school success (Hoge & Luce, 1979; Katz, 1986; Meyers, Atwell, & Orpet, 1968; Pelligrini & Glickman, 1990; Shaw, 1986; Slavin, Karweit, & Madden, 1989; Strother, 1987;

Swartz & Walker, 1984; Wooster & Carson, 1982). The three targeted skill areas were (a) listening comprehension skills (including story structure), (b) attending skills, and (c) social skills. The skills were taught with five teacher strategies that the research supported as being effective in teaching one or more of the targeted skills.

The five strategies used were modeling-coaching-cuing (Ladd & Mize, 1983), positive peer reporting (Grieger, Kaufman, & Grieger, 1976), student story telling (Hough, Nurss, & Wood, 1987), student story retelling (Koskinen, 1988; Morrow, 1985), and the encouragement council (Dinkmeyer, McKay, & Dinkmeyer, 1980). To implement RTL, each treatment teacher used a kit that included storybooks that introduced the learning-social skills to the children, audiotapes of the stories, and a teacher manual. The teacher manual included a description of each of the five teaching strategies and follow-up role-play and dramatic-play activities that reinforced the targeted skills.

The teachers in the treatment classes used the RTL materials, activities, and teacher strategies in a structured format an average of 2 hr per week for 12 weeks before the posttest and 24 weeks before the post-posttest. In addition, treatment teachers used the story structure questions and positive peer reporting introduced in RTL throughout the week to reinforce the targeted skills during their regular curriculum lessons. For a full description of the teacher strategies and the RTL materials, see Brigman, Lane, and Lane (1994).

Teacher training. Teacher training for the five treatment group teachers and their five assistants included two 7-hr workshops in September. The workshops provided the teachers with an understanding of the conceptual framework of RTL, the research base supporting the selected learning-social skills, and strategies used in teaching the skills. We conducted three half-day workshops in November, January, and March to provide a review of the skills and strategies and to discuss progress and difficulties in implementing the program.

Monitoring level of RTL program implementation. We determined a minimum level of RTL program implementation and communicated it to the participating teachers and teacher assistants. The minimum level of implementation contained specific frequencies for the use of five teaching strategies such as student story telling and materials such as reading the five stories from the RTL curriculum. The level of implementation was translated into a weekly monitoring report form that the treatment teachers completed. Overall, the level of implementation was then monitored in the following four ways:

1. At the beginning of this study (September), we conducted two 7-hr workshops to train teachers and their teaching assistants in the use of the RTL teaching strategies and materials. During the workshops, we asked the teachers and their teaching assistants to demonstrate their understanding of the RTL teaching strategies and materials. All participat-

ing teachers and teacher assistants satisfactorily demonstrated competency in using these strategies and materials.

2. The site supervisor randomly observed the treatment teachers weekly to monitor their use of the RTL curriculum.

3. We conducted scheduled classroom observation sessions with each treatment teacher once per week throughout the treatment period. After each 30-min observation, the treatment teacher and one of the authors would have a 15–30 min conference to discuss program implementation.

4. A series of 3 half-day follow-up workshops were conducted (November, January, and March). At these workshops the teachers and authors discussed implementation issues and received feedback on level of implementation. Student progress in developing the targeted skills also was discussed. A review of the teaching strategies and use of RTL materials were included. As part of the review, participants were asked to demonstrate the strategies and use of materials to the group.

To summarize, the initial demonstration of competency in the teaching strategies and use of RTL materials, weekly classroom observations by site supervisor and authors, and the follow-up workshops indicated consistently that the teachers were implementing the RTL program as designed.

Instruments

We used the following four measures to evaluate the children in the treatment and comparison classes:

1. Two subtests from the Metropolitan Readiness Test (MRT; Hough et al., 1991)—the auditory memory subtest (12 items) and the school language and listening subtest (15 items). The two subtests were combined to make one 27-item listening comprehension measure.

2. Story structure (a subtest of the Metropolitan Readiness Pre-Reading Composite).

3. ADD-H: Comprehensive Teacher's Rating Scale (ACTeRS—a 24-item behavior rating scale completed by the classroom teacher for each child; Ullman, Sleator, & Sprague, 1991). The scale covered four categories: attention, social skills, hyperactivity, and oppositional behavior.

4. Attending behavior rating. An independent observer was assigned to each class for four observation periods, one per day \times 4 days, for approximately 21 or 22 hr each. Children were observed for on-task, attending behavior. The observer rated each child at 12 intervals, 30 s apart on each of 4 days, for a total of 48 recorded observations of attending behavior.

Each of the four measures was administered to all 10 classes on three separate occasions—first as a pretest in September, next in January as a posttest, and last in March as a post-posttest.

Reliability. The MRT norms booklet reports internal consistency reliability coefficients of .80, .73, and .93 for auditory memory, school language and listening, and prereading composite, respectively. (Story structure is a subtest of the

prereading composite.) The ACTeRS manual reports internal consistency reliability coefficients ranging between .93 and .97. The interrater reliability of the independent attending behavior raters was determined during a 1-hr training session in which raters viewed a videotape of 4–5-year-old children in a classroom setting and rated selected students on attending behavior. Using proportion of agreement, we found a .91 interrater reliability.

Several factors provided a high degree of reliability for the data collected: training administrators of the various instruments, individual administration of instruments, supervision of the administration of instruments by the local school site supervisor, and using instruments with high reliability; also double entry of data into computers by separate individuals, multiple instruments and multiple data collectors, and consistent findings on the four instruments. The reliability of the data collected was monitored in the following ways for the four instruments used in this study:

1. The first instrument was a 27-item subtest of the MRT. Nonparticipating teachers at the three participating schools were trained in administering the instrument prior to the pretest being administered. The instrument was administered individually to the 145 participating students. Training was repeated prior to posttest and post-posttest. The protocols from the test administration manual of the MRT were followed. The site supervisor at each school supervised the administration of the instrument at the pretest, posttest, and post-posttest.

2. The second instrument involved students demonstrating their understanding of story structure by retelling a recently read story. The instrument used was a subtest of the Metropolitan Readiness Pre-reading Composite. Two independent test administrators, early childhood education graduate students in the local university, were trained to administer the subtest individually to all 145 participating students.

3. The third instrument was the ACTeRS. The scale was completed by the 10 participating classroom teachers for each student in their class. A training session was held for all participating teachers to clarify the meaning of each of the 24 items on the instrument.

4. The fourth instrument was the attending behavior rating. Graduate students from the local university's early childhood education program were trained as independent observers. They demonstrated high interrater reliability (.91). Each of the 145 students in this study were observed during regular classroom activities by the trained observers for 4 days, which totaled approximately 2½ hr each for the pretest, posttest, and post-posttest.

Validity. Listening comprehension measures Numbers 1 and 2: The Metropolitan Readiness I-Tests norms booklet demonstrates content validity through an extensive review of the literature on those skills important to early learning. Regarding predictive validity, correlation coefficients between the MRT subtests and the Stanford Achievement Test ranged from .62 to .83. Those coefficients show the extent

to which performance on the MRT is predictive of reading and mathematics achievement during the spring of first grade. The MRT was normed in 1985 with approximately 9,000 prekindergarten and kindergarten children from 290 school districts, representing a stratified random sampling of socioeconomic, race, gender, and geographic factors.

ACTeRS behavior rating: The ACTeRS was normed in 1981 with 1,339 students in eight schools. The percentage of Black, Hispanic, and Asian children in the norming population was representative of the national percentages. Content validity was verified through expert reviews. Construct validity was determined by factor analysis of items. Correlations among the factors from the four scales were between .30 and .69. Factor loading for items within each scale ranged from .52 to .91.

Attending behavior rating: Construct validity was verified through a review of the literature. Attentional behavior such as facing the speaker or stimulus rather than the more complex neurological concept of attention was the focus of this component of the study. Gibson and Levin (1975) have described directing eyes, ears, and other sense organs toward specific stimuli as the necessary behavior for maximum exposure to wanted information and as a behavior that can be learned. Cartledge and Milburn (1978), in their review of social skills research, found that attention and attending behavior repeatedly emerged among the most important factors for classroom success. Cobb (1970) studied first graders to identify observable class behavior that would predict achievement. Attending was the major predictor in both reading and mathematics.

Research Design

We used one between-factors and one within-factor multivariate design for this study. The 10 participating classes were administered pretest, posttest, and post-posttest measures. The between-subjects variable was treatment (two levels—RTL curriculum and control). The within-subject variable was time (three levels—September, January, March). The dependent variables were (a) listening comprehension Number 1 (auditory memory and school language and listening subtests of the MRT), (b) listening comprehension Number 2 (story structure subtest of the MRT), (c) ACTeRS behavior rating, and (d) attending behavior rating (independent observations). We used multivariate repeated measures analysis of variance, or “doubly multivariate” (Tabashnick & Fidell, 1989, p. 472), to analyze the data; a .05 level of significance also was used in this study.

Singularity of the variance-covariance was avoided through the use of a large number of participants, which also should ensure robustness to modest violations of a multivariate normal distribution. Doubly multivariate analyses circumvented the assumption of homogeneity of covariance because both the within-subject effect (time) and the dependent variables were analyzed “multivariately” (Tabachnick & Fidell, 1989).

The following research question was addressed in this study: What are the performance trends regarding attending, listening, and social skills for the children in RTL curriculum classes versus children in control classes?

Results

The statistical analysis included data from the two groups, measured on four dependent variables, collected three times over 7 months. The means and standard deviations are reported in Table 1. The repeated measures MANOVA (multivariate analysis of variance) incorporating four variables over time had a significant three-way interaction among the groups, dependent variables, and time ($\text{prob} > F = .001$). Therefore, we included a separate repeated-measures MANOVA for each dependent variable to better interpret the interaction (see Table 2). The significant results for time ($\text{prob} > F = .001$) were not surprising because most young children are expected to improve in listening and attending behaviors over 7 months. The effect of interest was the Time \times Group interaction, because that effect would represent the differences in performance trends. In three of four dependent variables (listening comprehension No. 2, ACTeRS behavior rating, and attending behavior rating), there were significant Time \times Group interactions (Table 2). We performed plots of means to interpret the interactions. Listening comprehension Number 1 did not have a significant interaction. Using the plots to interpret the significant interactions revealed that treatment classes showed significant increases on three of the four dependent measures compared with the control classes. Independent observation of attending behavior (attending behavior rating), story structure (listening comprehension No. 2), and behavior rating by teachers of attending behavior and social skills (ACTeRS behavior rating) all showed significant increases for the treatment classes. For listening comprehension Number 1 (a subtest of the MRT), there was no significant interaction because the two groups had approximately the same rate of increase.

Discussion

The original research question was whether preschool students in classes using the RTL curriculum would show significant increases in key learning-social skills. The results of this study indicated that there was a significant and positive difference between children in classes using the RTL curriculum, which focused on instruction and practice in attending, listening, and social skills, and comparison children. Differences were found on three of the four dependent variables: attending behavior rating through independent observation, behavior rating by teachers of student attending and social behavior, and listening comprehension measure Number 2 (story structure). We found no significant difference between the treatment group and the comparison group for listening comprehension mea-

Table 1.—Means and Standard Deviations of Dependent Variables, by Group

Variables and group	Pretreatment		Posttreatment		Post-posttreatment	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Listening comprehension (No. 1)						
Treatment	11.3	4.2	13.4	5.5	15.5	5.8
Comparison	12.6	5.1	14.1	5.4	16.4	5.7
Listening comprehension (No. 2)						
Treatment	2.3	2.0	3.4	2.4	5.1	1.6
Comparison	3.0	1.9	3.3	1.9	4.6	1.8
ACTeRS behavior rating						
Treatment	71.2	12.1	79.1	15.2	79.9	11.4
Comparison	83.6	11.5	84.5	12.7	86.9	8.1
Attending behavior						
Treatment	32.8	7.9	34.9	7.3	41.5	4.7
Comparison	36.7	6.7	37.4	5.7	39.5	3.3

Note. For the treatment groups, $n = 78$; for the comparison groups, $n = 67$. ACTeRS = ADD-H Comprehensive Teacher's Rating Scale.

Table 2.—Source for Repeated Multivariate Analysis of Variance Repeated Measures Analyses

Variable	Source	<i>df</i>	<i>F</i>	Prob. > <i>F</i>
Listening comprehension (No. 1)	Group	1	1.84	.177
	Time	2, 142	40.27	.001
	Time \times Group	2, 142	0.24	.786
Listening comprehension (No. 2)	Group	1	0.01	.926
	Time	2, 142	88.39	.001
	Time \times Group	2, 142	6.27	.003
ACTeRS behavior rating	Group	1	25.61	.001
	Time	2, 142	17.19	.001
	Time \times Group	2, 142	5.41	.005
Attending behavior rating	Group	1	5.51	.020
	Time	2, 142	54.18	.001
	Time \times Group	2, 142	14.71	.001

Note. ACTeRS = ADD-H Comprehensive Teacher's Rating Scale.

sure Number 1. Both groups showed substantial growth on that measure.

The average score for the treatment students was lower than that for comparison students on each of the four instrument measures at the pretest. This difference was by chance and not by design. To control for differences at the start of this study, we used two levels of random student selection as well as a statistical procedure (multivariate repeated measures) that accounted for any differences at pretest. The two levels of random participant selection are described as follows:

1. All three schools involved in this study placed students in their prekindergarten classes randomly. In each case, the only attempt to balance classes involved an attempt to have an equal number of boys and girls. No ability-level assessment or information was used in class placement. Any difference in ability level of students in various classes was random.

2. The five treatment and five comparison classes for this study were selected randomly from the pool of 15 possible prekindergarten classes at the three participating schools. Any difference in overall ability level of classes was random. In addition to random selection, we used a statistical procedure (multivariate repeated measures) to analyze the data. In that method, any differences between treatment and comparison students at the pretest are accounted for. The results of the multivariate repeated measures indicated that the performance trends regarding attending, listening, and social skills were significantly higher for treatment students than for comparison students. The research question in this study was, What are the performance trends over time regarding attending, listening, and social skills for students in the RTL classes versus students in comparison classes?

The research design included three data points—pretest, posttest, and post-posttest. That type of trend analysis over time using multiple data points is recognized as one of the

most promising methods for program evaluation (Knapp, 1995). The gains were evident across multiple measures and multiple sources for data collection and instrument administration in the three areas of interest (listening, attending, and social skills).

Our findings suggest that the skills and behaviors considered most predictive of long-term school success can be taught at the classroom level by the regular classroom teacher and can produce significant gains in those critical areas. More research needs to be done with preschool children regarding the effects of programs emphasizing learning skills and social skills. It seems clear from the research literature that those two skill areas are critically important to long-term school success and that they can be taught to young children. What is not clear is whether the RTL approach or similar approaches will have the expected long-term effect of promoting school success and decreasing school failure and school dropouts. Therefore, longitudinal studies are needed. Specifically, six of the research questions that require attention include the following:

1. Do preschool children who are systematically taught learning and social skills at ages 4–5 years vary in their academic achievement and behavior at ages 10–15 years versus similar children with less systematic teaching?
2. Do children receiving systematic instruction–practice not only in preschool but also in kindergarten and first grade perform significantly better than those receiving instruction–practice in preschool only?
3. At what level, if any, of teaching–practice does an inoculation effect against school failure take place?
4. What is the most efficient and effective length of teaching time–practice time in those skill areas?
5. What is the optimal amount of teacher training needed to effectively teach those skills?
6. Is inservice, preservice, or some combination the best mode of providing teacher training in that area?

Summary

The project in this study involved 145 inner-city preschool children during a 7-month period from September 1991 through April 1992. The focus of the project was to provide training to preschool teachers in the use of RTL, a curriculum that teaches children key learning–social skills associated with school success. The goal of this project was to determine the performance trends for children in classes using the RTL curriculum versus children in comparison classes, for attending, listening, and social skills.

This project suggests that preschool children can be taught learning and social skills that have been correlated with long-term school success, and, as a result, show significant increases in their successful behaviors. Implications for practice include more preservice and inservice training for teachers who would focus on those critical skills. The expected result would be significant increases in school success skills and correlated reduction in school failure.

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