

*EVALUATION OF A CLASSWIDE TEACHING PROGRAM  
FOR DEVELOPING PRESCHOOL LIFE SKILLS*

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Recently, nonmaternal center-based child care has been linked to problem behavior in young children (National Institute of Child Health and Human Development, 2003). In response, a comprehensive program to promote prosocial skills was evaluated in a classroom of 16 children between the ages of 3 and 5 years. Classroom observations were conducted during evocative situations to determine the likelihood of problem behavior (noncompliance, vocal or motor disruptions, aggression) and preschool life skills. A classwide teaching program was then implemented in a staggered manner across instruction following, functional communication, delay tolerance, and friendship skills. These four categories of preschool life skills, which included two to four related skills, were selected for classwide teaching because they were either identified by educators as important for early school success, have often been taught following functional assessments of more severe problem behavior, or both. Skills were taught on a classwide basis during typically scheduled activities (circle, free play, transitions, meals) via instructions, modeling, role play, and feedback. A multiple probe design showed that the program resulted in an 74% reduction in problem behavior and a more than four-fold increase in preschool life skills. Similar beneficial effects of the program were evident in questionnaire data gathered prior to and at the close of the evaluation. Finally, the teachers who implemented the program reported overall high levels of satisfaction with the classwide teaching program, the target skills, and the results. Implications for the design of early childhood experiences for preempting the development of serious problem behavior are discussed.

**DESCRIPTORS:** delay tolerance, classwide teaching, functional communication, friendship skills, instruction following, preschool life skills

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Problem behaviors such as aggression, disruption, and noncompliance in young children

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are associated with long-term social and academic difficulties (Agostin & Bain, 1997; Ledingham & Schwartzman, 1984). Poverty and developmental disability are well-recognized risk factors for developing problem behavior, which in turn interferes with school success and necessitates costly support (Kohen, Brooks-Gunn, Leventhal, & Hertzman, 2002; Olson & Hoza, 1993). A less obvious factor—nonmaternal center-based child care—has recently been linked to problem behavior in young children. The National Institute of Child Health and Human Development (NICHD)

study of early child care (2003) recently reported that time spent in nonmaternal care across the first 4.5 years of life was positively correlated with mother and child-care provider reports of aggression and disobedience. This relation between time spent in nonmaternal child care and problem behavior occurred across all family types, and appeared to be insensitive to the quality of care. Thus, nonmaternal center-based child care may be another risk factor for the development of problem behavior that may negatively affect children's social and academic trajectories. Because financial loss may be just as, if not more, detrimental to family and individual child functioning (Newcombe, 2003), an alternative to recommending that parents minimize the amount of time their young children spend in nonmaternal care (Belsky, 2001) would be to identify the nonmaternal care conditions that produce socially competent children. The present study describes an evaluation of a program designed for child-care centers toward achieving this goal.

Critical features of this program involve arranging for controlled exposure of preschoolers to evocative situations in which problem behavior is likely to occur while teaching appropriate social skills during these critical situations. This active teaching model may be contrasted with primarily proactive approaches that involve avoiding situations that may evoke problem behavior in preschools. Because the emergence of problem behavior is often considered part of normal development (e.g., Bredekamp & Copple, 1997), recommendations to early childhood educators often emphasize carefully designing the environment to avoid problem behavior. Common recommended strategies include "man-to-man" (as opposed to "zone") supervision of children, child-led free-play activities, frequent choice provision, multiple sets of play materials, predictable schedules, high levels of noncontingent praise and encouragement, developmentally appropriate and embedded instruction,

and incidental and errorless teaching (Bredekamp & Copple, 1997; Doke & Risley, 1972; Essa, 2002; Etzel, 1997; Hart, 1982; Hart & Risley, 1975; Jolivet, Stichter, Sibilsky, Scott, & Ridgley, 2002; Jones, Drew, & Weber, 2000; LeLaurin & Risley, 1972; Pretti-Frontczak, Barr, Macy, & Carter, 2003). Our goal in designing the current program was to balance the advantages of proactive environmental design with thoughtful, gradual, and repeated introduction of conditions that may evoke problem behavior in order to teach socially desirable responses to challenging classroom situations. We call these desirable responses to commonly occurring and evocative classroom situations *preschool life skills*.

The specific preschool life skills taught in the current study were derived from two distinct sources. The first was the functional assessment and treatment literature. A functional assessment is an empirically rooted and recently legislated (Individuals with Disabilities Education Act, 1997) tool for identifying the conditions associated with problem behavior (Iwata, Kahng, Wallace, & Lindberg, 2000; O'Neill, Horner, Albin, Storey, & Sprague, 1990). The most rigorous assessment is the functional analysis (Iwata, Dorsey, Slifer, Bauman, & Richman, 1982/1994), in which relations between problem behavior and environmental events are demonstrated within single-subject experimental designs. Hundreds of studies have reported the use of a functional analysis to identify the reinforcers that maintain problem behavior (Hanley, Iwata, & McCord, 2003). Once the social function of problem behavior is identified, perhaps the most commonly used intervention involves teaching an alternative behavior (e.g., saying "excuse me") that serves the same function as the problem behavior (e.g., yelling to gain access to the teacher's attention), thereby reducing problem behavior. This intervention, which was initially described by Carr and Durand (1985), is typically referred to as functional communication training. Once the

socially desirable behavior occurs to the exclusion of problem behavior, skills relevant to tolerating delays to the functional reinforcers are then taught (Hagopian, Fisher, Sullivan, Acquisto, & LeBlanc, 1998; Hanley, Iwata, & Thompson, 2001; Vollmer, Borrero, Lalli, & Daniel, 1999).

Hundreds of studies also have shown function-based interventions being effectively applied following the development of usually severe problem behavior in young children (Hanley et al., 2003), presumably because there must be a preexisting pattern of problem behavior for the functional assessment to be conducted. Due to the remarkable progress in the development of function-based interventions, the time seems appropriate to consider preventive applications of the technology to deter the development of problem behavior in young children.

The preventive approach described in the current study involved teaching skills—the type that are often taught once the function of severe problem behavior has been identified—prior to the development of severe rates or forms of problem behavior. For example, if problem behavior is evoked by difficult situations and is sensitive to negative reinforcement, a function-based intervention would likely strengthen compliance (Lalli et al., 1999; Piazza et al., 1997) and antecedents to compliance such as eye contact (Hamlet, Axelrod, & Kuerschner, 1984), and teach an alternative response to escape or neutralize difficult situations (R. H. Horner, Day, & Day, 1997; Fisher et al., 1993; Lalli, Casey, & Kates, 1995). By contrast, if problem behavior is evoked by deprivation from social or material reinforcers and reinforced by these same events, a common function-based intervention is to teach responses that would be effective in gaining adult or peer attention and acquiring various important materials (Durand & Carr, 1991; Hagopian et al., 1998; Hernandez, Hanley, Ingvarsson, & Tiger, 2007; Wacker et al., 1990). Delays to important reinforcers can also evoke problem behavior

(Hagopian et al., 1998; Hanley et al., 2001; Vollmer et al., 1999), and multiple strategies are available for teaching young children to tolerate reinforcement delay (Kanfer & Zich, 1974; Mischel, Ebbensen, & Zeiss, 1972; Schweitzer & Sulzer-Azaroff, 1988). Thus, these social behaviors were selected for inclusion in the set of preschool life skills to be taught to young children who may be at risk for developing problem behavior due to the extensive amount of time spent in nonmaternal care but who have not been reported to engage in levels of problem behavior warranting clinical referral. It should be noted however, that the current study did not examine the preventive effects of these interventions over an extended period of time, but rather focused on evaluating the short-term effects of this approach on problem behavior and preschool life skills.

The second source from which preschool life skills were derived was the school readiness literature, in which early elementary teachers and early education experts have been surveyed to identify skills they deemed critical for school success. A number of researchers have assessed and reported teachers' readiness views over the past 20 years (Davies & North, 1990; Hains, Fowler, Schwartz, Kottwitz, & Rosenkoetter, 1989; West, 1993). During this time, the emphases have generally shifted from academically oriented skills to social skills (Heaviside & Farris, 1993; Lin, Lawrence, & Gorrell, 2003; Piotrkowski, Botsko, & Matthews, 2001). Lin et al. published the most recent and comprehensive evaluation of kindergarten teacher opinions of school readiness using data from the National Center for Education Statistics (2000). These authors summarized the opinions of over 3,000 kindergarten teachers from different regions of the country reporting during the 1989 through 1999 school years. The five skills reported to be most important or essential by this cohort of kindergarten teachers included (a) tells needs and thoughts, (b) is not disruptive, (c) follows directions, (d) takes turns

and shares, and (e) is sensitive to others (84%, 79%, 78%, 74%, and 62% of the sample rated these particular skills as either very important or essential, respectively). These data provided additional support for targeting functional communicative responses in our study and also provided the impetus for targeting additional skills (e.g., saying "thank you," acknowledging and complimenting others, sharing, comforting others in distress) that involved children providing social reinforcers for others.

To teach these skills, we used a behavioral skills training approach that involved providing instruction to all members of the classroom while they collectively interacted in their routine activities (referred to here as a *classwide* approach). Behavioral skills training was selected because this approach has been proven to result in lasting changes in complex behavior of young children (e.g., Himle, Miltenberger, Flessner, & Gatheridge, 2004; Miltenberger & Thiesse-Duffy, 1988). A classwide approach was adopted primarily because all of the children who attended this classroom were presumably at risk for developing problem behavior as a function of the extensive amount of time each child experienced nonmaternal care conditions (NICHD, 2003) and because of the practical advantages classwide approaches confer in terms of efficiency and vicarious learning (Greenwood, Terry, Arreaga-Mayer, & Finney, 1992).

The ultimate aim of this developing line of research is to determine if teaching preschool life skills will protect children from the risk associated with extensive nonmaternal care. The more modest goal of this study was to determine the short-term efficacy of a program designed to simultaneously teach essential social skills and minimize the problem behavior of a group of preschool children. In the current study, both direct and indirect measures (classroom observations and questionnaires, respectively) were used to determine the probability of preschool life skills and problem

behavior before and after the children had experienced classwide teaching of the preschool life skills. In addition, teacher satisfaction with the target skills and the teaching program was evaluated.

## METHOD

### *Participants*

Sixteen children, 7 boys and 9 girls, ranging in age from 3 years 9 months to 5 years 3 months, participated in the current study. One child (Kevin) had been diagnosed with nonspecified developmental delays, and the other children were typically developing. All children had intact speaker and listener skills that were generally consistent with their ages, and were classmates in an inclusive, full-day, university-based preschool serving 20 children. The preschool was open from 7:45 a.m. to 5:30 p.m. each weekday and was closed during all university holidays. Four children were excluded from the evaluation (but not from the classwide teaching) due to inconsistent attendance. The 16 participants spent a mean of 8.5 hr per weekday in the classroom. All of the children had been enrolled in full-time nonmaternal care for at least 1 year prior to participating in the current study.

### *Setting*

The preschool classroom included carpeted and tiled areas; an open, child-sized bathroom area; cubbies for storage of children's personal items; and several pieces of child-sized furniture. There were two shifts of teachers in the classroom each day (7:30 to 11:30 a.m. shift and 1:45 to 5:45 p.m. shift) who implemented the teaching program. There were four student teachers and one supervisor on each shift. The teachers were junior- and senior-level undergraduate students who were specializing in child care and development or early childhood education and were enrolled in a practicum course to develop professional skills. The teachers were given guidance and performance

feedback from on-site supervisors who held masters degrees in human development or behavior analysis (second and fourth authors, respectively). Although supervisors interacted with the children, their primary role was teaching and evaluating the student teachers; thus, the teacher-to-child ratio in the classroom was 1:5.

Observations of children during evocative situations, challenging conditions that presented an opportunity for the child to display appropriate preschool life skills or engage in problem behavior, were conducted in the main classroom (36 m by 20 m) across five typically scheduled activities (free choice, circle time, meals, centers, and transitions). Evocative situations are described in detail in the Appendix, but included events such as an adult giving an instruction, the child being told to wait, an adult diverting attention to another, and so on. Free choice was a 60-min period in which children independently selected one of nine simultaneously available activities (dramatic play, blocks, art, games, computer, etc.). Circle time was a 15-min teacher-led activity during which children sat in a half circle facing the lead teacher. The lead teacher engaged the children in songs, finger playing, and conversations, or occasioned participation in science, craft, or cooking activities. Family-style dining was arranged during meals. Small groups of children sat with a teacher at a small table, children passed and served food and beverages, and the teacher modeled appropriate mealtime behavior (e.g., washing hands prior to eating, appropriate use of silverware, chewing with mouth closed). During centers, children rotated between different teacher-structured activities that included manipulative skills (e.g., block building), art skills (e.g., cutting, drawing, pasting, clay forming, tracing, writing), and concept skills (e.g., matching, pointing to, or naming colors, shapes, alphabet). Transitions involved children moving from one activity to another activity (e.g., from snack time to washing hands to outside time).

#### *Dependent Measures and Interobserver Agreement*

*Direct measures.* Using paper and pencil, teachers recorded children's behavior during specified evocative situations. Three categories of behavior were recorded by teachers during each observation: a preschool life skill, a problem of commission, or a problem of omission (see the Appendix for descriptions of each skill, and see Table 1 for a description of problem behavior). These measures were developed for ease of use by teachers and because they captured the types of responding that were important across the multiple and different evocative situations in a single scoring system. If problem behavior and a preschool life skill occurred during the same observation (this rarely occurred), only problem behavior was recorded; the categories were thus mutually exclusive such that only one was scored for each observation. The same three measures were also collected during the teaching conditions that occurred between baseline probes. Each child was observed five times in each of the 13 evocative situations in the initial baseline period. Thus, 1,040 observations were conducted prior to implementing the classwide teaching program. In all subsequent baseline probes, each child was observed twice in each of the 13 evocative situations (416 observations were conducted in each subsequent baseline probe). Data are reported as the percentage of situations in which these three different response types occurred.

A second observer, either a classroom teacher or a researcher, simultaneously and independently recorded target responses during 45% of baseline observations and 36% of teaching trials. An agreement was defined as scoring the same response category during each observation or trial. Interobserver agreement scores were calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100%. Mean agreement for the direct measures was 95% (range, 47% to 100%) during baseline observa-

Table 1  
Operational Definitions of Problems of Commission and Omission

Problems of commission	
Vocal disruption	Saying "no" to an adult instruction, yelling or screaming while indoors, swearing, rudeness, name calling
Motor disruption	Throwing items, tearing books, swiping items off tables, kicking items, knocking over structures, grabbing materials from others, running away, standing on furniture, sitting on tables, opening classroom doors
Aggression	Kicking, hitting, pinching, shoving, spitting, forceful grabbing, scratching, biting, throwing things toward another person, spitting
Problems of omission	
Approximation	Engaging in an approximation of the desired response
No response	Ignoring adults or other children, noncompliance, not saying thank you upon receipt of requested materials

tions and 96% (range, 89% to 100%) during teaching trials. With one exception, all agreement measures were uniformly high (above 80%). Due to the exceptionally low level of agreement observed during the second baseline probe of Situation 8 (47%), those data were removed from the analysis.

*Indirect measures.* Prior to the description of the classwide teaching program and the initiation of the direct observations, a 13-item questionnaire for determining the likelihood of preschool life skills in each of the 13 evocative situations was administered to two supervisors and the program administrator (questionnaire available from the first author). The three respondents were instructed to complete one questionnaire for each of the children with whom they were familiar. Two of the 16 children (Kevin and Doug) were new to the program at the time of the questionnaire administration; thus, questionnaires were completed for 14 of the 16 children. Respondents reported whether or not the child was likely to engage in the preschool life skill given each evocative situation. The data were converted into the percentage of situations in which a preschool life skill was reported as more likely to occur than problem behavior. These same questionnaires were again administered to the same three respondents after the classwide teaching program was completed.

Interrater agreement was calculated by comparing each completed questionnaire on a question-by-question basis for each dyad. An

agreement was defined as both respondents scoring the specific skill as either occurring or not for each evocative situation. Agreement coefficients were calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100%. The item-by-item analysis yielded an overall mean interrater agreement of 75% (range across dyads was 66% to 80%). In addition, Pearson correlational coefficients were calculated by comparing overall questionnaire outcomes (prior to and after classwide teaching) for each dyad. The mean Pearson correlational coefficient was .82, all correlations were either equal to or greater than .78, and all were statistically significant ( $p < .01$ ). Thus, due to the binary nature of the responses (skill or no skill given each evocative situation), the item-by-item agreement is acceptable but somewhat low. By contrast, the outcome agreement is somewhat high considering Cicchetti and Sparrow's (1981) cutoff criterion of  $r = .6$  for a good test-retest reliability coefficient.

#### *Procedure*

*Consultant model.* A consultant model was used to maintain collection of adequate amounts of reliable data and to promote the integral implementation and scheduling of the independent variable. The importance of the 13 evocative situations and descriptions of the varied opportunities to observe children's behavior during routine activities were explained to the teachers and supervisors during

two 1-hr meetings. Preschool life skills were categorized into four teaching units: instruction following (responding appropriately to name, complying with simple and multistep instructions), functional communication (requesting assistance, requesting attention, framed requesting to adults, framed requesting to peers), delay tolerance (tolerating delays imposed by adults and by peers), and friendship skills (saying "thank you," acknowledging or complimenting others, offering or sharing, comforting others in distress). Each unit contained two to four skills, their operational definitions, the general evocative situation, the more specific observing and teaching opportunities, and a precise feedback statement (the latter to be used only during classwide teaching; see the Appendix). Two of the authors met with the teachers weekly during 30- to 45-min meetings to review the data-collection and implementation goals as well as the teaching procedures that were to be used in each upcoming week. The classroom supervisors provided daily (and often immediate) feedback on the correct implementation of the teaching procedures and on maintenance of adequate data collection.

*Baseline.* The classwide teaching program was evaluated in a classroom context that already involved explicit strategies for promoting desirable behavior and minimizing problem behavior. These strategies were articulated in the teachers' manual, and supervisors provided feedback on the correct implementation of these strategies throughout the day. The proactive strategies involved (a) the provision of high levels of free (putative) reinforcement (i.e., frequent transitions to new activities, emphasis on creative and novel lesson planning, emphasis on frequent and balanced distribution of teacher attention, frequent choices), (b) minimizing potentially aversive aspects of the classroom (i.e., use of warnings prior to transitions, nondirective prompting, choices of activities and tasks, errorless direct instruction), and (c) reviewing classroom rules immediately

prior to opportunities for rule-following behavior (e.g., reminding children of the rule that only teachers open doors prior to lining up for outside time). The reactive strategies involved (a) descriptive praise for desirable behaviors, (b) following through with instructions (i.e., model and physical prompts were delivered following noncompliance with vocal prompts), and (c) a contingent observation procedure for aggression and vocal and motor disruptions (Porterfield, Herbert-Jackson, & Risley, 1976). Contingent observation involved moving the child away from the activity to a place where the child could still observe but not participate in the ongoing activity, and then returning the child to the activity after 1 min.

During baseline, teachers arranged specific evocative situations to occur throughout the day. If the child emitted the targeted preschool life skill, the teacher provided descriptive praise. For instance, if the teacher called a child's name and the child emitted the target skill, the teacher said, "I like the way you stopped what you were doing, looked at me, and said, 'Yes' when I called your name." If the child did not emit the target skill, the teacher continued her typical interactions with the child. As noted above, the teacher implemented contingent observation if the child engaged in aggression or disruption (e.g., problems of commission). If problems of omission occurred following an instruction, the teacher did not implement contingent observation, but instead followed through with the instruction (i.e., issued a model prompt and, if necessary, physical guidance).

*Classwide teaching program.* The independent variable was the classwide skills teaching program. The program was added to the preexisting set of contingencies that were operating in baseline and consisted of four components: instructions, modeling, role play, and feedback. Each preschool life skill was first introduced to the children during the morning circle time activity. During this initial exposure, the lead teacher described the skill and the rationale for

its importance. The lead teacher then modeled the skill with the assistance of another teacher when necessary. Each child was then given an opportunity to practice the skill with one of the teachers. If the student engaged in the target skill, the teacher provided descriptive praise, which specified each feature of the skill that was correct. If the student did not engage in the target skill, the teacher described the skill again, and provided one additional opportunity to practice during circle time. Opportunities to practice the skill were then provided throughout daily activities (e.g., meals, transitions, free play). Feedback was provided as above, except that during the teaching program, evocative situations were repeatedly arranged following problems of commission or omission until the child emitted the skill or the teacher was required to attend to another child, whichever came first. Operational definitions, evocative situations, teaching opportunities, and specific feedback statements for each of the 13 skills are provided in the Appendix.

An additional teaching component was added for Skills 8 and 9 (tolerating delays with adults and children, respectively). During these trials, the teachers taught the children a mediating response in which to engage during the delays, which was to repeat the phrase, "When I wait quietly, I get what I want." Mediating responses were shown by Toner and Smith (1977) to be effective in promoting delay tolerance, especially if the response did not specify the item for which the child was waiting. The teaching involved prompting the children to repeat the phrase in a progressively quieter manner such that it would eventually occur privately (the private nature of the mediating response is the reason this response was not included in the definition of delay tolerance).

*Sequence and timing of training and baseline probes.* The initial baseline occurred over the course of 12 school days. The target skills were taught in order from 1 to 13 and were separated in four units. The teachers were

allowed 2 days to teach each of the skills, and following teaching of all of the skills included in a given unit, baseline probes were conducted over 4-day periods. Six days were dedicated to teaching Unit 1 (responding appropriately to name, complying with simple and multistep instructions), 8 days for Unit 2 (requesting assistance, requesting attention, framed requesting to adults, framed requesting to peers), 4 days for Unit 3 (tolerating delays imposed by adults and by peers), and 8 days for Unit 4 (saying "thank you," acknowledging or complimenting others, offering or sharing, comforting others in distress). The entire evaluation required 15 weeks to complete.

To increase the likelihood that all children experienced individual teaching as a part of the classwide program, we specified opportunity and performance goals to guide teachers' time allocation throughout the 2-day periods. The opportunity goal specified that each child be observed in the relevant evocative situations at least 10 times during the teaching period for each skill. The performance goal specified that each child independently engaged in the preschool life skill on at least five occasions. Towards the end of the 2nd day during which a particular skill was targeted, teachers began to allocate more of their teaching time to those children who either had not yet experienced 10 opportunities to learn the skill or had not been observed to emit at least five independent preschool life skills. Because several of the skills could sometimes be evoked during a single social interaction (e.g., responding to one's name often preceded completing an instruction and requesting an item preceded a period of waiting for an item) and because the evocative situations occurred naturally throughout the day, the teachers were instructed to teach the target skill as well as practice all previously taught skills during teaching conditions as much as possible.

*Booster teaching.* After all 13 skills had been taught on a classwide basis (and the final



baseline probe was completed), individual skills were identified for additional teaching. The data from the last baseline probe (i.e., those observations that followed Unit 4 teaching) were scanned to identify skills that had not been emitted on either observation or had been emitted on only one of the two observations. The data were examined for each child individually starting with the data for Skill 1 and continuing through the skills in order until two skills had been identified. These two skills were then targeted with that child during the booster teaching period, which occurred over the course of 8 days. Teachers were also instructed to provide descriptive praise or feedback and additional practice each time they witnessed a child behaving in any of the 13 specified evocative situations. Thus, in addition to focusing on the two earliest skills that each child did not acquire, instruction was provided with respect to the entire 13-skill curriculum whenever possible throughout booster teaching.

#### *Experimental Design*

A multiple-probe design (R. D. Horner & Baer, 1978) was used to determine the impact of the teaching program on preschool life skills and problem behavior. It is important to note that descriptive praise was provided for engaging in a preschool life skill throughout both baseline and teaching conditions. The baseline probes differed from the teaching conditions in that there was no prompting to emit the preschool life skill and additional practice opportunities were not programmed to follow problems of commission or omission. Thus, the baseline probes were used to determine the amount of learning that occurred and extended past the initial teaching conditions.

## RESULTS AND DISCUSSION

#### *Description of Classwide Teaching Implementation*

There were 208 occasions in which opportunity or performance goals could be assessed (i.e., 16 children multiplied by 13 evocative

situations). The implementation goal of 10 teaching opportunities per child per evocative situation was met on 98% (204 of 208) of occasions. The performance goal of five skills emitted correctly was met on 99% (205 of 208) of occasions. The mean number of teaching opportunities was 13, and the mean number of skills independently emitted was nine across children and evocative situations. The intervention was distributed among all 16 children in the classroom, although more teaching opportunities were experienced by 2 children in particular (Doug and Kevin). Teaching opportunities varied somewhat more across skills than across children, with the most teaching dedicated to responding appropriately to one's name (Skill 1).

#### *Effects of Classwide Teaching*

*Direct measures.* The effects of classwide teaching on the relative probabilities of preschool life skills and problems of commission and omission are shown in Figure 1. Each of the four panels represents one of the four teaching units; they are stacked in the order in which the units were taught. Each vertical bar represents the performance of a single child with respect to one unit during a single condition. The probability of a preschool life skill is shown by the black bars above each horizontal axis, whereas the probability of a problem of omission or commission is shown by the white and gray bars, respectively, that extend below each horizontal axis. The order of children is the same across each bar cluster; this order was determined based on performance in the baseline condition of instruction following (Unit 1).

During the instruction-following (Unit 1) baseline, children emitted instruction-following skills during approximately half the opportunities ( $M = 52\%$ ). Children almost never responded to their name appropriately (Skill 1;  $M = 4\%$ ), but most completed a simple instruction (Skill 2) and completed a complex instruction (Skill 3) ( $M_s = 80\%$  and  $74\%$ ,

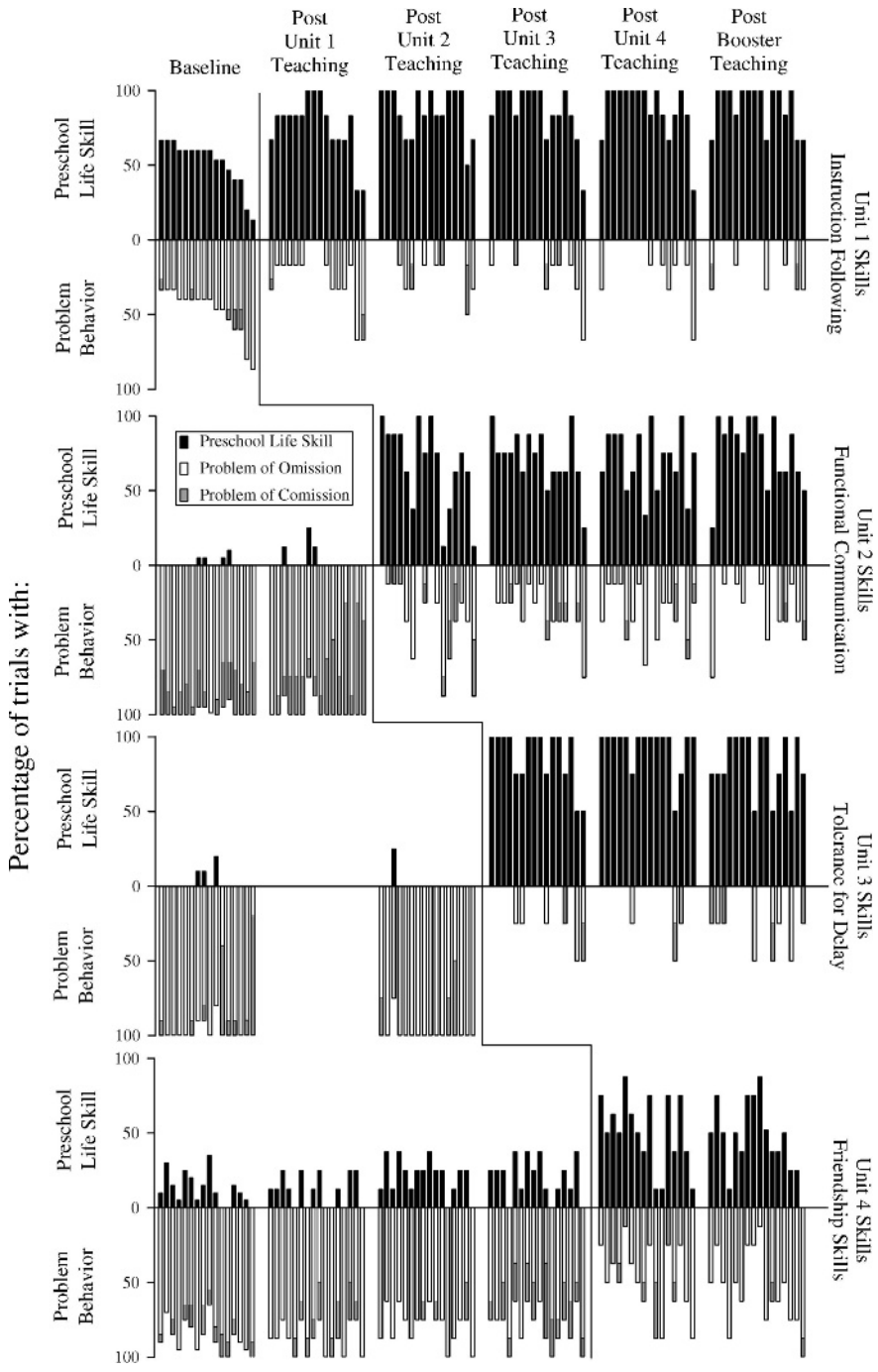


Figure 1. The probability of problem behavior (bars below horizontal axes) or preschool life skills (black bars above horizontal axes) is shown for each child (vertical bars) across units (panels) and evaluation conditions (columns).

respectively). The initial baseline measures showed that children almost never emitted the functional communication and tolerance for delay skills (Units 2 and 3, respectively). By contrast, some variable responding was observed in baseline for the friendship skills (Unit 4). Children almost never acknowledged a peer or shared (Skills 11 and 12, respectively). By contrast, children said “thank you” and comforted others in distress (Skills 10 and 13, respectively) at relatively higher levels ( $M_s = 33\%$  and  $11\%$ , respectively).

When a preschool life skill was not emitted in the initial baseline, mostly problems of omission were observed. Nevertheless, problems of commission (aggression, vocal and motor disruptions) occurred during 10% of observations during the initial baseline, and were most likely to occur during the evocative situations associated with functional communication (Figure 1).

An increase in the probability of instruction-following skills (Unit 1) was observed following implementation of classwide teaching of these skills. This effect was primarily a function of an increase in responding to one’s name (Skill 1), due to the high levels of complying with simple and multistep instructions (Skills 2 and 3) observed in baseline. Improvements on the baselines of functional communication skills (Unit 2) and friendship skills (Unit 4) were not observed at this time (baseline measures for tolerance for delay [Unit 3] were omitted due to unreliable data). After teaching functional communication skills (Unit 2), the percentage of situations in which Unit 2 skills were observed increased for all children ( $M = 67\%$ ), and the skill level varied across children. No change was observed on the tolerance for delay (Unit 3) and friendship skills (Unit 4) baselines following the teaching of functional communication skills. The largest improvement occurred for tolerance for delay skills after the classwide teaching of those skills ( $M = 88\%$ ). Increases in friendship skills (Unit 4) were

Table 2  
Proportional Change in Problems of Commission and Omission across Children Between the Initial and Last Baseline Probes

Child	Problems of commission	Problems of omission
Julie	-100	-99
Amy	-100	-90
Tanner	-100	-88
Molly	-100	-84
Eva	-100	-73
Lisa	-100	-68
Regan	-100	-68
Holly	-100	-67
Bryan	-100	-58
John	-100	-50
Alice	-75	-61
Mike	-60	-67
Doug	-57	-33
Kevin	-51	-55
Quincy	-33	-54
Lucy	0	-75
<i>M</i>	-80	-68

observed only following teaching those skills ( $M = 49\%$ ). The improvement for friendship skills was the most modest. All skills improved, but improvement was most apparent for comforting others in distress (Skill 13).

With each baseline probe, increases in the classwide occurrences of preschool life skills were observed for instruction following, functional communication, and tolerance for delay (Units 1, 2, and 3, respectively). As preschool life skills persisted, the occurrences of problems of omission and commission decreased for the entire class of children. By comparing the initial two baseline observations in each of the 13 evocative situations with the final two observations from the probe after booster teaching, proportional changes in target behaviors were determined for each child (see Table 2). The proportional decreases for problems of commission and omission across children were 80% and 68%, respectively. Problems of commission were eliminated during observations in the 13 evocative situations for 10 of 16 children. In addition, the overall proportional increase in preschool life skills across children was 420%.

Because it is difficult to determine changes in the probability of preschool life skills for

particular children from Figure 1 and because proportional changes in acquired behaviors may be misleading, Figure 2 depicts the percentage of evocative situations in which a preschool life skill was observed during the initial two baseline observations (before any classwide teaching) and during the last two observations (following all classwide teaching) for each of the 16 children. The panels are ordered from the largest to the smallest effect. These data show that (a) all children engaged in a much higher proportion of preschool life skills after classwide teaching, (b) acquisition of the 13 skills varied across children (cf. Amy's and Doug's data), and (c) acquisition or possibly maintenance of the 13 skills was incomplete for all children.

Figure 3 shows that all of the 13 skills improved for the class following the teaching program. The largest improvements were observed for responding to name (Skill 1), requesting assistance (Skill 4), requesting attention (Skill 5), framing requests to adults (Skill 6), framing requests to peers (Skill 7), delay tolerance with adults (Skill 8), delay tolerance with peers (Skill 9), and comforting others in distress (Skill 13). By contrast, compliance with simple and multistep instructions (Skills 2 and 3, respectively) and saying "thank you" (Skill 10) showed relatively less improvement due primarily to the relatively higher levels of these behaviors prior to implementing the classwide teaching program. Acknowledging others and offering or sharing (Skills 11 and 12, respectively) were observed infrequently in baseline and showed the least overall improvement.

*Indirect measures.* The influence of the teaching program on the development of preschool life skills also was evaluated using questionnaires administered to two teachers and a program coordinator before and after classroom implementation. These results (Figure 4) were derived using all three respondents' data. A preschool life skill was tallied if either two or three respondents scored the skill as likely to occur. There was a large difference

across the 14 children for whom these ratings were obtained in the percentage of situations in which a skill was reported as most likely to occur prior to classwide teaching. Following classwide teaching, skills were reported as more likely to occur for 11 children and to occur at the same level for 3 children. A large difference in the amount of improvement was observed across those children whose skills were reported to occur at a higher level following intervention (range, 8% to 54%). A one tailed  $t$  test for dependent samples showed that the difference between pre- and postteaching indirect measures was statistically significant,  $t(13) = 4.06$ ,  $p < .005$ .

*Effect sizes.* Cohen's  $d$  statistics were calculated to describe the size of the effects of classwide teaching on preschool life skills for both the indirect and direct measures. Effect sizes provide a scale unit-free measure of the magnitude of a treatment effect (Cohen, 1994; Glass, 1976; see McConville, Hantula, & Axelrod, 1998, for a thorough discussion of the use of effect sizes in applied behavioral research). For the indirect measures, the mean scores before classwide teaching were subtracted from the mean scores after classwide teaching and divided by the mean of the standard deviations of both data sets (McConville et al.; White, Rusch, Kazdin, & Hartmann, 1989). The resulting effect size was 1.1, which is considered a large effect for these types of measures (Cohen).

Larger effect sizes were observed with the direct measures. For these measures, the mean of the initial two baseline measures (for each skill) was subtracted from the mean of the postbooster baseline measures and divided by the mean standard deviation. These were calculated to determine the effect size for both the entire class of children and each individual child. The resulting effect size for the class was 5.4. The same initial and last sets of baseline data were used to determine the effect size of the classwide teaching program on problems of omission and commission; the resulting effect

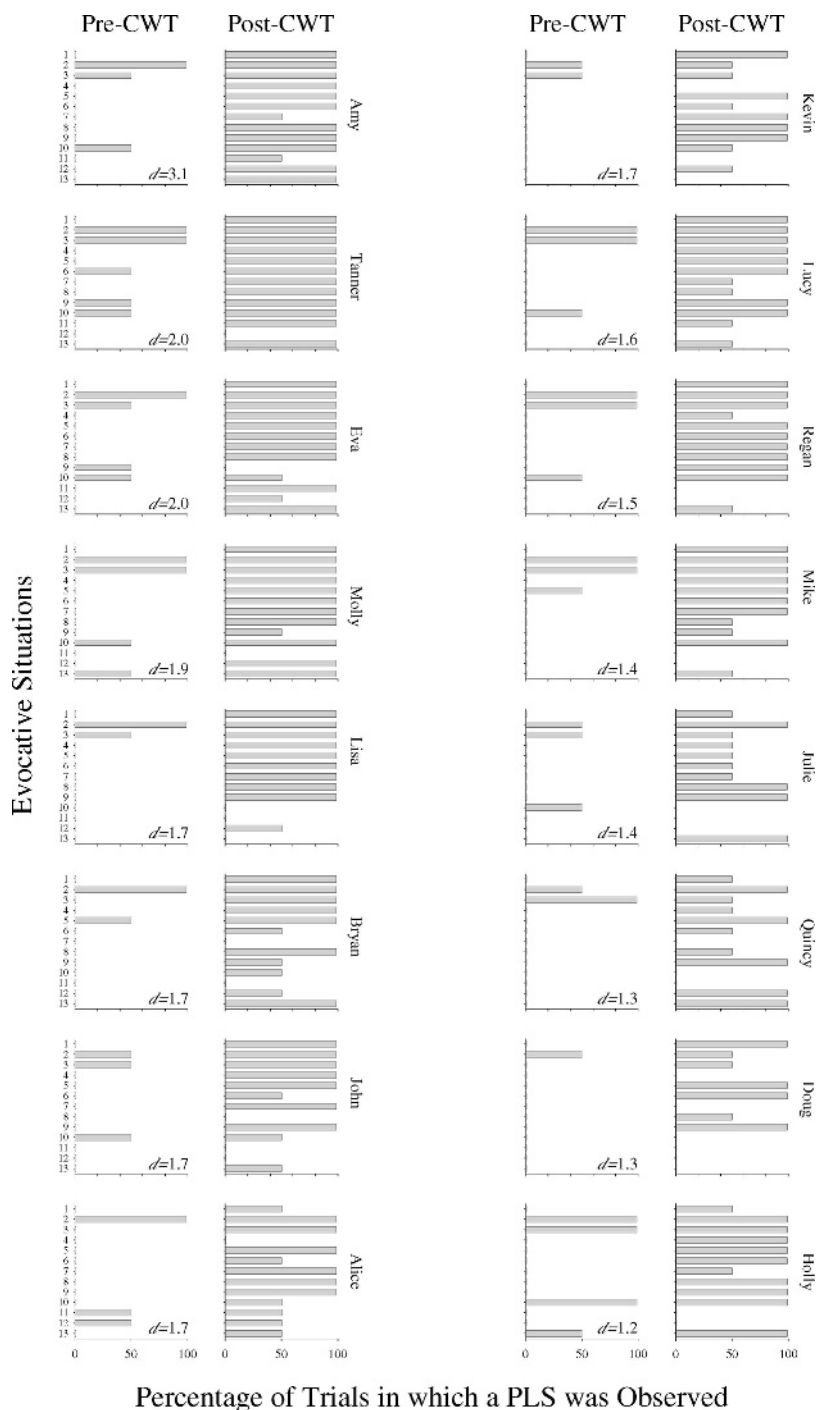


Figure 2. The percentage of evocative situations in which a preschool life skill was observed during the initial two baseline observations before classwide teaching (pre-CWT) and during the last two observations (post-CWT) for each of the 16 children.

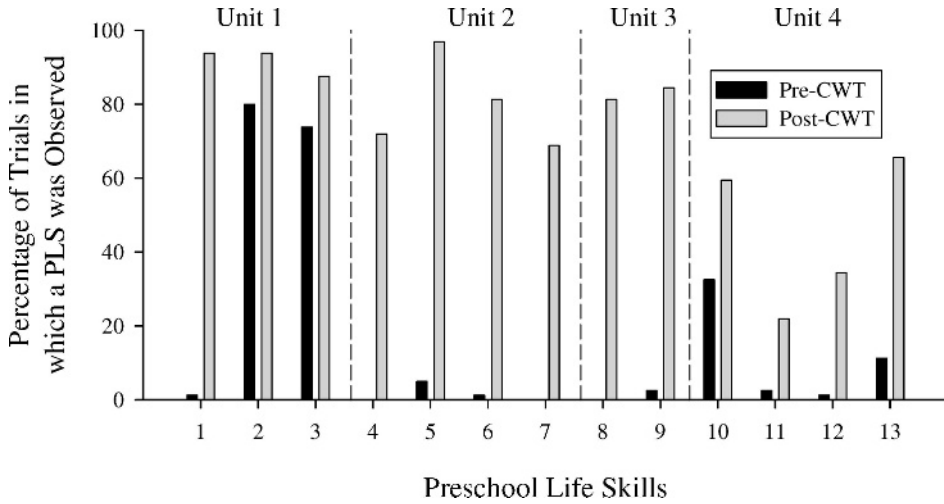


Figure 3. The percentage of situations in which each preschool life skill was observed both before (black bars) and after (gray bars) the classwide teaching program was implemented.

sizes were  $-4.7$  and  $-1.7$ , respectively. Finally, effect sizes for individual children ranged from  $3.1$  to  $1.2$  (see Figure 2).

*Analysis of Booster Teaching*

The two skills targeted during booster teaching for each child were observed infrequently in the baseline probe immediately

preceding booster training ( $M = 9\%$ , range,  $0\%$  to  $50\%$  across children). Following booster teaching, these skills occurred five times more often ( $M = 55\%$ , range,  $25\%$  to  $100\%$  across children). At least one of the target skills improved for all children, and both of the skills improved for half of the children. To determine if booster teaching per se was responsible for the

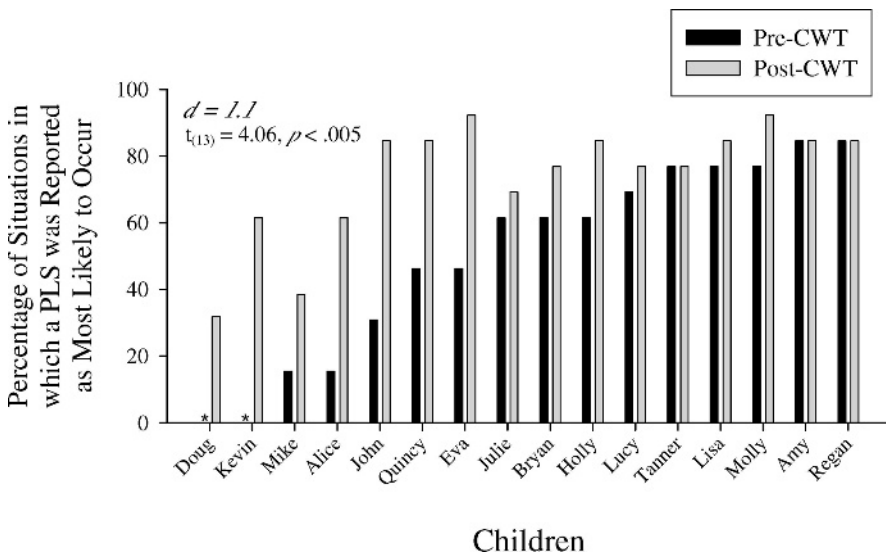


Figure 4. The percentage of situations in which a preschool life skill was reported as likely to occur are plotted before and after classwide teaching occurred. An effect size (Cohen's  $d$ ) is noted in italics; the result of a one-tailed  $t$  test for dependent samples is also shown.

increased probability of nonmastered skills or whether all nonmastered skills improved as a function of the continuation of the classwide teaching program, percentages of other nonmastered skills not explicitly targeted during booster teaching were determined. These nontargeted skills were observed more frequently in the baseline probe immediately preceding booster training ( $M = 44\%$ , range, 0% to 50% across children) than the target skills. Although these skills were not explicitly targeted during booster teaching, they also improved following booster teaching ( $M = 64\%$ , range, 0% to 100%), but to a much lesser extent than the targeted booster skills. The proportional increase in targeted booster skills was more than 10 times that associated with the nontargeted skills. These data suggest that booster teaching was useful, but the analysis is compromised by different initial baseline levels of responding between targeted and nontargeted skills and the ceiling imposed by the observation-based measurement system.

#### *Relations Between Skill Measures and Participants' Ages*

Pearson correlation coefficients between the ages of the 16 children and the initial and last direct baseline measures were determined. A strong positive correlation was found between age and initial baseline skill levels ( $r = .73$ ); this positive correlation was more moderate following the classwide teaching program ( $r = .64$ ). To provide a further analysis of the influence of age on preschool life skills, the children were divided into two groups according to age. The 8 youngest children were assigned to one group, and the 8 oldest children were assigned to a second group. Using the initial baseline (direct) measures, means were 13% and 19% for the youngest and oldest groups, respectively. A one-tailed  $t$  test showed that differences in the young and old groups in baseline was statistically significant at the .05 level ( $p = .017$ ). Using the last baseline set of probes, means were 65% and 78% for the youngest and oldest

groups, respectively. A one-tailed  $t$  test showed that differences in the group means after classwide teaching were also statistically significant at the .05 level ( $p = .033$ ). One-tailed  $t$  tests of the younger and older children's performances via the indirect measures, which included only 14 children (initial indirect measures were not collected for Doug and Kevin) were also conducted. The differences in the group means before classwide teaching were statistically significant at the .05 level ( $p = .037$ ); however, this was not the case after the groups of children experienced classwide teaching ( $p = .130$ ). Thus, it appears that both measures were sensitive to differences in social skills that may be expected as a function of age, but that these differences were minimized as a function of classwide teaching.

#### *Social Acceptability Measures with Teachers*

The means and ranges of the eight teachers' ratings regarding the acceptability of the classwide teaching program and the importance of the preschool life skills are reported in Table 3. The teachers agreed, usually strongly, with the notions that (a) the majority of the children benefited from the program, (b) the classroom social environment improved because of the teaching of the skills, (c) the benefits of teaching the skills outweighed the effort expended, (d) they would teach the same skills in another child-care program using the same classwide teaching program, and (e) they would recommend the program to other teachers.

## GENERAL DISCUSSION

A functional relation between our classwide teaching program and probabilities of directly observed preschool life skills and problem behavior was demonstrated as units of the program were sequentially introduced into the classroom. Improvements in the relative probabilities of the preschool life skills occurring prior to and following classwide teaching were evident via both direct and indirect measures.

Table 3  
 Questions and Results of the Social Acceptability Questionnaire Administered to Teachers Who Implemented Classwide Teaching

Questions	Responses	
	Mean	Range
The majority of the children who experienced the preschool life skills program benefited from the program.	6.5	6-7
The classroom social environment was improved because of teaching the preschool life skills.	6.9	6-7
The social and behavioral benefits that resulted from teaching the preschool life skills are worth the effort invested.	6.8	5-7
I would teach these same preschool life skills in another child-care program.	6.9	6-7
I would teach the preschool life skills using the same classwide teaching strategies in another child care program.	6.4	5-7
I would recommend the preschool life skills program to other teachers.	7.0	

*Note.* The eight respondents used a 7-point scale with the following relations: 7 = *strongly agree*, 4 = *not sure*, 1 = *strongly disagree*.

Although the overall levels and proportional changes in preschool life skills varied across children (and evocative situations), direct measures showed that the probability of preschool life skills improved for all children and problems of commission were eliminated for the majority of children. Finally, the teachers who implemented the program reported uniformly high overall satisfaction with the skills identified for improvement, the classwide teaching program, and the results of the program.

Agreement for the direct measures was uniformly high, showing that classroom teachers could effectively use the three-option measurement system during varied and naturally occurring activities. However, there are three potential limitations to our direct measurement system worth noting. First, the depth of the analysis is somewhat compromised by the categorical nature of the measurement system (e.g., we do not know if aggression was more likely to be affected by the program than motor disruptions), but reliable and orderly relations between socially important clusters of behavior were obtained (and attempts at having the teachers provide more precise direct measures in a pilot evaluation resulted in unreliable data). Second, the breadth of the analysis is also limited by not collecting or reporting measures of problem behavior that occurred outside the

documented evocative situations. Nevertheless, the indirect measures do provide an index of the more general effects of the program. The final possible limitation is relevant to observer bias. The teachers who implemented the program also provided some of the direct measures of child performance, and this dual role may have resulted in a bias towards an effect of the program. This bias may be better controlled in future evaluations by having observers blind to status of implementation.

Although the goal was for the direct and indirect measures to account for the same behavioral phenomenon, this may not have been the case in the current study. The uniformly low levels of preschool life skills evident in the initial baseline suggest that the direct measures may not have been sensitive to initial individual differences in social skills across children. By contrast, there were large differences observed across children with the indirect measures that were collected prior to the classwide teaching program, suggesting greater sensitivity to individual differences (Figure 4). In addition, the size of the effects of classwide teaching was also highly discrepant between direct and indirect measures, with the direct measures showing much greater sensitivity to the influence of the program. Nevertheless, the indirect measures before and after classwide teaching correlated well with the



initial and final baseline probe measures ( $r = .60$  and  $.64$ , respectively), both measures showed a positive effect of the program for the group of children, and each provides a different and important description of the levels of preschool life skills before and after the teaching program. Therefore, we recommend that continued research on the impact of classwide teaching for these or other skills should include both direct and indirect measures.

Several features of the evaluative context provide support for the generality of the effects. The target behaviors were evoked by a number of different teachers and peers during various daily activities (e.g., meals, free play) and evocative situations (e.g., waiting for the milk, waiting for art supplies), and the multiple-probe design provided measures of target behavior several days following the implementation of different teaching units. Thus, the program's generality was indicated across people, activities, situations (within activities), and time. However, we did not conduct follow-up measures over an extensive time period, nor did we conduct generalization probes in highly discrepant contexts (e.g., at home with siblings during family meals). Thus, the generality and durability of the behavior change are important areas for further research.

As noted earlier, the ultimate aim of this research is to determine if teaching preschool life skills will protect children from the risk associated with extensive nonmaternal care and other risks for school failure as well (e.g., language delays). At this point, we have shown that existing levels of problem behavior can be reduced and preschool life skills can be acquired by young children in a unique child-care setting. Thus, there are two primary changes to the evaluation methods required to satisfy our ultimate aim. First, systematic replications of this study should occur under several different and more typical preschool conditions. Perhaps the most unique aspects of the context

in which the current study was conducted include (a) a rich ratio of children to teachers (5 to 1); (b) young teachers seeking bachelor degrees in early childhood education, who each had coursework focusing on child development and behavior-analytic classroom techniques; and (c) a specific program for promoting desirable behavior and minimizing undesirable behavior with proactive (e.g., choice provision, noncontingent reinforcement) and reactive (e.g., follow through with instructions, contingent observation following aggressive or disruptive behavior) strategies. Additional evaluations should therefore be conducted in contexts that involve more typical teacher-child ratios, teachers with varied backgrounds implementing the program, and varied approaches for promoting desirable problem behavior operating in the background.

Second, the evaluation methodology must be shifted from an intervention to a prevention model. It is and will continue to be important to know what programs will decrease existing problem behavior, and a number of experimental methods are available to identify those effective interventions (Baer, Wolf, & Risley, 1968; R. D. Horner & Baer, 1978; Kazdin, 1973). However, an analysis of a different sort is required to determine if experiencing a particular curriculum, such as the classwide teaching of preschool life skills, prevents or decreases the likelihood or severity of the types of behavior problems reported to occur in children who have experienced extensive center-based child care (NICHD, 2003). Following replications of the program under more typical conditions, a longitudinal evaluation involving randomly assigned classrooms of children who do and do not experience the curriculum will be necessary to determine the preventive efficacy of this program.

Prior to applying this program across a large number of classrooms, there are several features that require additional consideration and possibly modification through additional research.

The dose of the teaching program (i.e., strength of the independent variable) may require additional refinement. Each skill was taught over a 2-day period; children experienced an average of 13 opportunities to learn each skill; and children engaged in the target skill an average of nine times before the formal teaching period for that unit was terminated. Additional opportunities to learn occurred as a function of the chained nature of several skills. For example, when children were learning to wait appropriately, they first necessarily practiced saying “excuse me” to gain the teacher’s attention and “May I have the—, please” to request materials. Additional learning presumably occurred as a function of participants witnessing other children engaging in or being taught the skills (the amount of vicarious learning was not described in the current study due to the obvious methodological difficulties in doing so). Thus, although there was arguably an extensive amount of teaching, the dose of the teaching varied unsystematically across children and was primarily controlled by the 2-day time period. The dose of the teaching program described in the current study clearly produced an improvement for all children; however, the magnitude, consistency, and unmeasured durability of that improvement would likely be enhanced with a stronger dose of the program. One means of delivering a stronger dose would be to extend the teaching time per skill (e.g., from 2 to 4 days). Alternatively, it might be best to establish a mastery criterion in which the class progresses to the next skill once all children have engaged in the current skill a set number of times. The mastery number could eventually be determined empirically by analyzing the likelihood of skill maintenance following various mastery criteria.

This shift from a time-based to a performance-based criterion would be especially important when children with more severe disabilities are included in the classwide teaching and evaluation. As described in the current

study, the program can be readily applied to children of typical development between 3 and 6 years. Considering that most preschool classrooms adopt an inclusive model (McLeskey & Daniel, 1999; Salisbury & Vincent, 1990) in which teachers provide care and educate similarly aged children of varying developmental abilities, and that preschool children with developmental disabilities (e.g., autism) are at greater risk for later school difficulties, creating a more flexible teaching program is essential. In our recent experience applying this program in inclusive classrooms (data not reported here), we have found it essential to allow teachers and classroom consultants to individualize specific skills (e.g., the use of sign language to request materials) and teaching programs and thus allow for microteaching when necessary (e.g., graduated guidance, delay of model prompts). The shift from a time-based to a group performance-based criterion also provides greater opportunities to instruct students who need more teaching (i.e., after a day or two of classwide implementation, teachers can focus their efforts on the few children who have not yet mastered a particular skill).

In addition to the dose of the program and the criterion for introducing the next skill, the evocative situations as well as the skills taught will likely require some refinement. For instance, once children learn to tolerate delays for materials, it may be important to introduce the more challenging situation of request denial (i.e., the difference between a teacher saying “wait” and “no”). Once a child learns to complete a multistep instruction quickly when issued by a teacher in close proximity, it may be important to gain compliance with instructions provided to groups of children from across the classroom. These refined evocative situations may better simulate elementary classroom situations, which are characterized by more children yet less material and adult resources. Also, it may be important to teach multiple appropriate responses for each evocative situa-

tion, for instance, teaching several means to greet a new peer or comfort others. (Invariant appropriate responses were targeted to increase the likelihood of vicarious learning in the classroom.) Beyond simply increasing the number of responses to similar evocative situations, it may also be important to teach more complex discriminations. For instance, children should be taught to comply with most adult instructions (e.g., teachers and parents) but to engage in a self-protective skill when instructed by a stranger to take a walk with him or her (e.g., Poche, Brouwer, & Swearingen, 1981). It may be appropriate to teach children to request assistance or a break from a difficult task, but ultimately, it would be preferable if that response occurred only after some persistence in completing the difficult task.

Preparing preschool children for the social complexities they will experience during their transition to kindergarten and elementary classrooms is perhaps the most important task of early childhood educators. It is a goal that trumps academic preparedness for both early elementary teachers (Lin et al., 2003) and for most parents of preschoolers (Piotrkowski et al., 2001; Wesley & Buysse, 2003). The current study describes a comprehensive, but preliminary, approach for teaching skills thought to be both functionally equivalent to most preschoolers' problem behaviors and important for early school success. Further refinement of the program and evaluation of those refinements may allow early childhood educators to maximize the likelihood that all children are ready to succeed during the early school years.

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## APPENDIX

## Operational Definitions, Evocative Situations, and Teaching Opportunities

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Unit 1: Instruction following	
Skill 1	Responding appropriately to name: Within 2 s, the child, stops competing behavior, orients towards speaker, and says “yes.”
Evocative situation	Adult calls child by first name.
Teaching (or probe) opportunities	During meals, while child is waiting for food or drink. During free play, while child is engaging a preferred activity. While child is transitioning between activities or locations in classroom.
Feedback	“When I call your name, stop what you are doing, look at me and say ‘Yes.’”
Skill 2	Complying with simple instructions: Within 3 s of the initial prompt, child initiates completion of the instruction and completes the instruction in a timely manner.
Evocative situation	Adult provides a single-step instruction.
Teaching (or probe) opportunities	During meals, instruct child to take some of food, pass the food to [name], pour a half a glass of [liquid], wipe your mouth, throw away your napkin, scrape your plate, dump your [liquid], stack your cup or plate, or push in your chair. During free play, instruct child to pick a letter, show me [or give me] the [object], put the [item] on the [surface], pick a [item], sit in the chair, or walk to [specify area]. During a transition, instruct child to walk to the bathroom, use soap, dry your hands, grab your coat, put on your coat [hat or mittens], or walk to the library.
Feedback	“When I give you an instruction, do it right away.”
Skill 3	Complying with multistep instructions: Within 3 s of the initial prompt, child initiates completion of the instructions and completes the instructions in a timely manner.
Evocative situation	Adult provides a multistep instruction.
Teaching (or probe) opportunities	During meals, instruct child to take some of food and pass the [item] to [name], pour a half a glass of [liquid] and pass [liquid] to [name], put your utensil down and wipe your mouth, scrape your plate and stack it, dump your [liquid] and stack your cup, or stand up and push in your chair. During free play, instruct child to take off your coat and put it in your cubby, pick a letter and walk to that area, show me [or give me] the [described item] and the [another described item], show me [an action] and [another action], walk to [area] and pick an [item], or put [an item] in your cubby and come back. During a transition, instruct child to walk to the bathroom area and go potty, [or get a tissue and blow your nose], pump the soap and rub your hands together, dry your hands and throw away the paper towel, grab your coat [or hat or mittens] and put them on, go to the library and sit down, or put on your coat and zip your coat.
Feedback	“When I give you instructions, do them right away.”
Unit 2: Functional communication	
Skill 4	Requesting assistance: Child requests assistance by saying “help me, please” within 45 s of instruction delivery (using appropriate tone and voice volume).
Evocative situation	Difficult task.
Teaching (or probe) opportunities	During free play or centers, instruct child to put on or fasten the clothes, put [items] on high shelf, open the lotion [or lip balm] container, tie her shoes, finish the parquetry [spatial relations game], open the plastic container, punch holes in the paper, rip the tape from the dispenser, or staple the pages together. During a transition, instruct child to open the lotion [or lip balm], put on your coat [coat is inside out or hung high], zip up your coat, put on your gloves, or tie your shoes.
Feedback	“When something is too hard to do, find a teacher and say ‘help me please.’”
Skill 5	Requesting attention: Child recruits attention by saying “excuse me” (using appropriate tone and voice volume).
Evocative situation	Adult attention is diverted.
Teaching (or probe) opportunities	During free play, centers, meals, or transitions, a second teacher will prompt the target child to obtain a teacher’s attention when that teacher is talking with another adult, talking with another child, talking on the phone, writing something, helping another child with a task, facing away from the child while working at a high counter, or engaged in setting up the next activity.
Feedback	“When you want something from a teacher or a friend and they are doing something else, say ‘excuse me’ to get them to look at you.”
Skill 6	Framed requesting to adults: Child says “excuse me” to gain adult’s attention, waits for a response, and then requests access to the area or material in the form of “May I —.”

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## APPENDIX

*(Continued)*


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Evocative situation	An area is blocked by an adult or a preferred material is unavailable.
Teaching (or probe) opportunities	During free choice and transitions, stand in front of doorways, cubbies, paper towel holder, bathroom trash, between tables, or hold any relevant material necessary. During centers, hold necessary or preferred materials (e.g., an art supply). During meals, delay passing the foods or drink.
Feedback	“When someone is in your way or has something that you want, say ‘excuse me’ to get their attention, and then say, ‘May I —’ to get what you want.”
Skill 7	Framed requesting to peers: Child says “excuse me” to gain peer’s attention, waits for a response, and then requests access to the area or material in the form of “May I —.”
Evocative situation	An area is blocked by a peer or a preferred material is unavailable.
Teaching (or probe) opportunities	Same as with Skill 6 except that a helper child will be involved in delaying and delivering the requested event or material.
Feedback	“When someone is in your way or has something that you want, say ‘excuse me’ to get their attention, and then say, ‘May I —’ to get what you want.”
Unit 3: Tolerance for delay	
Skill 8	Tolerating delays imposed by adults: Child says “okay” and waits patiently for 30 s for the adult-mediated event.
Evocative situation	Adult tells child to wait for something and delays providing requested item or event for about 30 s.
Teaching (or robe) opportunities	Same as for Skill 6 except for the insertion of the delay.
Feedback	“When an adult tells you to wait, say, ‘okay,’ and use your waiting words.” (“When I wait quietly, I get what I want.”)
Skill 9	Tolerating delays imposed by peers: Child says “okay” and waits patiently for 30 s for the peer-mediated event.
Evocative situation	Peer tells child to wait for something and delays providing requested item or event for about 30 s.
Teaching (or robe) opportunities	Same as for Skill 7 except for the insertion of the delay.
Feedback	“When another child tells you to wait, say, ‘okay,’ and use your waiting words.”
Unit 4: Friendship skills	
Skill 10	Saying “thank you:” Within 5 s of receiving an item from someone, child orients to the giver and says “thank you.”
Evocative situation	Receiving something from another person.
Teaching (or probe) opportunities	During meals, pass a food or drink container, provide a cup, plate, napkin or utensil, or provide access to the dish scraper. During free play, deliver an item that was not previously accessible (e.g., from an out-of-reach bin), share an item (or prompt a helper child to share), or pass out an item that the child can take home (e.g., art work that has dried). During transitions, hand out paper towels after hand washing, hand each child his or her coat or other clothing items, or pass out outdoor toys to children in line.
Feedback	“When someone gives you something, look at them and say ‘thank you.’”
Skill 11	Acknowledging or complimenting others: Within 10 s of a newcomer’s arrival to an area, the target child greets (“hello”) or compliments (“I like—”) the newcomer.
Evocative situation	Another child enters the classroom or a play group
Teaching (or probe) opportunities	During meals, a teacher will arrange for the helper child to approach the target child who is seated at a table. During free play or centers, a teacher will arrange for the helper child to approach the target child who will be engaged with preferred materials.
Feedback	“When someone new comes to the area where you are playing, say ‘hello’ or something else that is nice.”
Skill 12	Offering or sharing: Within 10 s of a newcomer’s arrival, target child offers some of the toys or materials within reach.
Evocative situation	Another child is without toys or activity materials.
Teaching (or probe) opportunities	During free play or centers, a teacher will arrange for the helper child, who will not have any materials, to approach the target child who is playing with multiple materials.
Feedback	“When you see someone who does not have any toys, share some toys with them.”
Skill 13	Comforting others in distress: Within 10 s of an event, target child approaches the victim and asks, “Are you okay?”
Evocative situation	Another person shows signs of pain or distress.

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## APPENDIX

*(Continued)*

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Teaching (or probe) opportunities

During meals, free play, or centers, a teacher will bump his or her own body into any surface, trip (but not fall) over surfaces or items, drop items on oneself, pinch a body part with an item, describe an event that was mildly unpleasant (e.g., “My cat stayed out all night in the cold last night”), or report on mild physical ailments (e.g., “My legs hurt a bit from running yesterday”).

Feedback

“When someone looks hurt or upset, ask the question, ‘Are you okay?’”

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