

EVALUATION OF THE PRESCHOOL LIFE SKILLS PROGRAM IN HEAD
START CLASSROOMS: A SYSTEMATIC REPLICATION

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In an attempt to address risk factors associated with extensive nonfamilial child care, we implemented the preschool life skills (PLS) program (Hanley, Heal, Tiger, & Ingvarsson, 2007) in two community-based Head Start classrooms. A multiple baseline design across classrooms, repeated across skills, showed that the program resulted in a 5-fold increase in PLS and an accompanying reduction in problem behavior, replicating the effects observed by Hanley et al. (2007).

Key words: classwide teaching, delay tolerance, functional communication, preschool life skills

The National Institute of Child Health and Human Development (NICHD) study of early child care (NICHD, 2003) reported that the overall amount of time that school-aged children spent in nonfamilial child care during their initial 4.5 years was positively correlated with reports of problem behaviors (e.g., aggression, noncompliance) by caregivers and teachers. The relation held despite differences in quality, type, and stability of child care. A large-scale follow-up study showed that the effects did not dissipate over time; that is, problem behaviors were positively correlated with time spent in center-based child care through sixth grade (Belsky et al., 2007). To address these risks, Hanley, Heal, Tiger, and Ingvarsson (2007) described an effective classwide program for teaching particularly relevant social skills in a single classroom of 16 children. The skills taught by Hanley et al. included those that were (a) considered to be

functionally equivalent to problem behavior in that they were evoked by the same situations and were maintained by the same reinforcers that often maintain problem behavior (e.g., Carr & Durand, 1985) and (b) reported by early elementary teachers to be important for early school success (Lin, Lawrence, & Gorrell, 2003).

Thirteen skills related to instruction following, functional communication, delay tolerance, and friendship were identified from these distinct literatures. Behavioral skills training was used to teach the preschool life skills (PLS) to the children; however, teaching occurred throughout all regularly scheduled activities with all children. Direct observational data showed over a four-fold increase in the probability of PLS and a 74% decrease in problem behavior across the class of children. The classroom teachers also indicated high satisfaction with the selected skills, the teaching program, and the magnitude of the results.

Although the outcomes reported by Hanley et al. (2007) were mostly favorable, several features of the study limited the generality of

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doi: 10.1002/jaba.132

the results. First, the teachers who implemented the program all had bachelor's level coursework on child development and evidence-based classroom-management techniques. Second, there was a relatively rich teacher-to-child ratio (1:5); preschool teacher-to-child ratios typically range from 1:6 to 1:10. Third, the program was implemented with evidence-based practices for addressing problem behavior and promoting desirable behavior (e.g., Porterfield, Herbert-Jackson, & Risley, 1976). Additional evaluations are therefore needed in classrooms that include teachers with varied backgrounds, more typical teacher-to-child ratios, and different approaches for promoting desirable behavior in the classroom. The current study was designed to address these limitations and possibly establish the generality of the PLS program via replication under different conditions.

METHOD

Participants

Participating children were members of two 20-student classrooms at an inclusive community-based Head Start program that served children aged 3 through 5 years. Fourteen children (six boys and eight girls), who ranged in age from 3.4 to 4.9 years ($M=4.0$), participated in the evaluation. Nine children were from Classroom A; five children were from Classroom B. One child (Alex) had been diagnosed with developmental delays; two (Van and Nell) were English language learners; and the other children were typically developing. Consent was obtained from the parents of all children to participate in the program; however, children were excluded from the analysis if they did not have intact English speaker and listener skills (seven children) or if they were not in attendance for the pretests, posttests, the majority of teaching days, or any combination of those attendance issues (19 children).

A lead teacher, an assistant teacher, and a paraprofessional supervised children in each

classroom from 7:30 a.m. to 12:30 p.m. (the teacher-to-child ratio in each classroom ranged from 1:7 to 1:10). The teachers' prior teaching experience ranged from 0 to 13.5 years ($M=3.1$), and all had either an associate's or bachelor's degree. With the exception of one paraprofessional in Classroom B, all teachers participated in the program.

Dependent Measures and Interobserver Agreement

Consultants and additional trained research assistants directly observed and then recorded (using paper and pencil) children's behavior during specified evocative situations. Evocative situations occurred or were arranged by teachers during daily activities (free play, mealtime, etc.). Three categories of behavior were recorded during each observation: a PLS (e.g., complying with a multistep instruction, asking for help, complimenting a peer), a problem of commission (i.e., problem behavior), or a problem of omission (i.e., no response or an approximation of the PLS). Targeted responses for each skill were defined in a manner identical to that described by Hanley *et al.* (2007). Observers collected data during only those trials that were implemented with perfect integrity (i.e., accurate presentation of the evocative situation). A second observer simultaneously and independently recorded responding during 44% of observations. An agreement was defined as scoring the same response (from the three options) during each evocative situation. Mean agreement was 95% (range across skills, 80% to 100%).

Consultative Model

A consultative model was used to assist teachers in implementation of the PLS curriculum. The first author presented a 90-min preview of the teaching program to all staff before the beginning of the school year. The second and third authors conducted the classwide teaching (CWT) preassessments for all skills and subsequently met with the classroom lead teachers for 10 to 30 min each week. During these weekly

meetings, the next PLS to be taught was described, strategies for arranging and capitalizing on naturally occurring evocative situations were discussed, and feedback on teacher implementation of the CWT, implementation goals, and student performance was provided. Finally, the consultants provided daily on-site assistance in arranging a mean of 19% of evocative situations across the teaching program.

Pre- and Post-CWT Assessments

The pre-CWT assessment was used to determine baseline levels of target behaviors before any experience with the PLS program; the post-CWT assessment determined the maintenance of these skills after program implementation. The pre-CWT assessment occurred during the first 8 school days, and the post-CWT assessment occurred 4 school days after completion of the CWT. During pre-CWT and post-CWT tests, the consultants arranged all evocative situations throughout the day. If the child emitted a PLS, the consultant provided descriptive praise. If the child did not emit the target skill, the consultant continued her typical interactions with the child. Evocative situations were set up twice with each child per skill during each assessment.

Classwide Teaching Evaluation

Before each PLS was taught, baseline probes were conducted. Immediately after CWT of each skill, an evaluation probe was conducted to assess whether each child acquired that particular skill. All probes were identical to pre-CWT and post-CWT tests with one exception; the teachers, rather than the consultants, arranged or identified the evocative situations and delivered consequences for correct responding. On each probe day, each child was observed twice in the relevant evocative situation.

The CWT program consisted of four components: instructions, modeling, role-play, and feedback. The importance of the target skills was described to the children, and the particular skills were demonstrated by the teachers or consultants

each day during circle times or meals. Opportunities to practice the skill were provided throughout daily activities. Feedback was provided as above (i.e., descriptive praise was provided when a child engaged in the target PLS), except that during teaching days, the situation-specific behavior was described to the child following problems of commission or omission and the evocative situation was repeatedly arranged until the child emitted the skill or the teacher was required to attend to another child (for elaboration, see Hanley et al., 2007). The CWT of each skill was implemented for 2 to 5 days. With only a few exceptions, teaching ended when each child was observed in the relevant evocative situations at least 10 times and each child independently engaged in the PLS on at least five occasions.

Booster teaching occurred immediately after all 13 PLS had been taught, during the 2 weeks before the post-CWT test. As was done in Hanley et al. (2007), booster teaching was included to assist children in acquiring skills that had not been learned previously and to strengthen the skills that had been acquired through deliberate practice. Evocative situations were arranged for all skills in a manner identical to CWT. Teachers and consultants also created individual PLS pages for each child. These pages contained the child's name and a list of the skills. Engagement in the target skill on the first trial of that day resulted in a sticker being placed next to the skill. If a child received a sticker for each skill in a unit, he or she was given a congratulatory certificate.

Design

A multiple baseline design across classrooms, repeated for each of the 13 skills, was used to determine the impact of the CWT program on PLS and problem behavior. The classrooms alternated between having 1 and 2 days of baseline probes before CWT. Examination of trial-by-trial data occurred at the end of each baseline phase to detect any potential classwide trends before introduction of CWT.

RESULTS AND DISCUSSION

The implementation goals of at least 10 teaching opportunities and five correct responses per child per skill were met on 87% and 79% of occasions, respectively. Thus, the program was implemented at a similar level as the original study (Hanley *et al.*, 2007), but required more calendar time (7 months compared to 4 months in the original study).

The relative probabilities of PLS before and after CWT of each skill are shown in Figure 1. Near-zero levels of most PLS were observed in each classroom during pre-CWT measures, with the exception of Skills 2 and 3. In Classroom A, Skills 7 and 9 also occurred at relatively high baseline levels, perhaps due to the acquisition of the same skills directed towards adults (Skills 6 and 8) immediately before those baseline probes. Trial-by-trial data showed no baseline trends for any skills and low levels of the targeted PLS. Large

improvements in the probability of the targeted PLS occurred only when CWT was implemented. Thus, CWT likely was responsible for the observed improvements. Two important features limit the strength of this conclusion: (a) Improvements in classwide behavior were consistently larger for Classroom A than for Classroom B, perhaps due to nearly double the attrition rate and one fewer participating teacher in Classroom B, and (b) Skills 2, 3, 11, and 12 showed little or no improvement following CWT, consistent with the results of Hanley *et al.* (2007).

Figure 2 depicts the percentage of evocative situations in which a PLS was observed during the pre-CWT and post-CWT assessments for each child. These data show that the overall probability of PLS improved for all children after CWT, but that all 13 skills were not observed on all opportunities for a single child, and that the

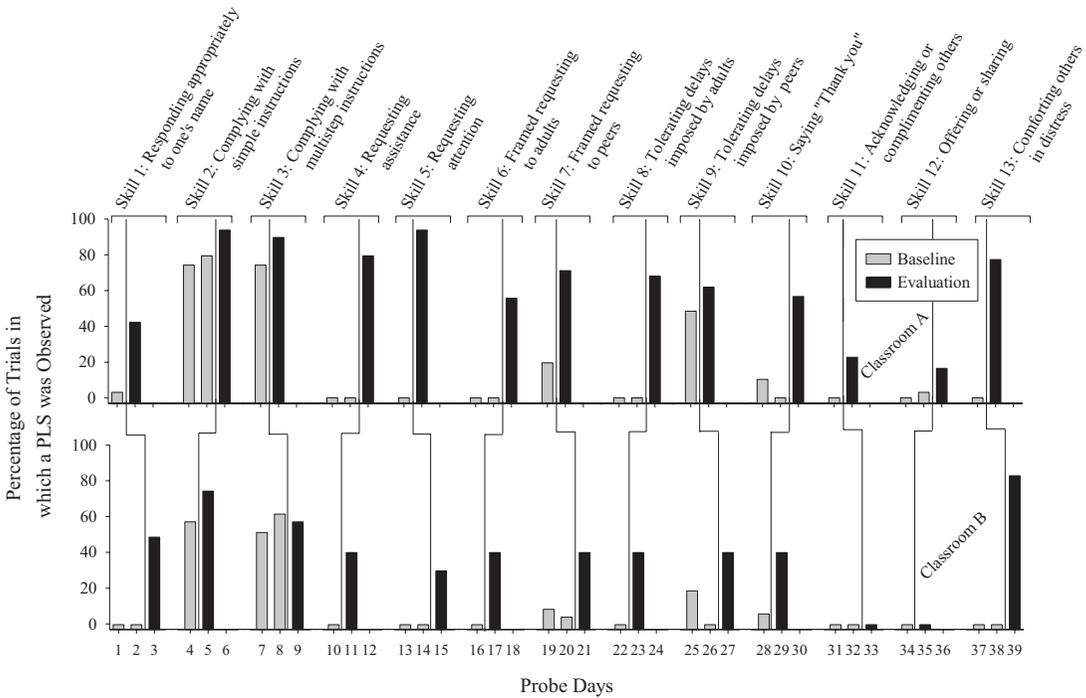


Figure 1. Percentage of trials in which a correct preschool life skill (PLS) was observed during baseline and evaluation probe days for each skill in Classroom A (top) and Classroom B (bottom).

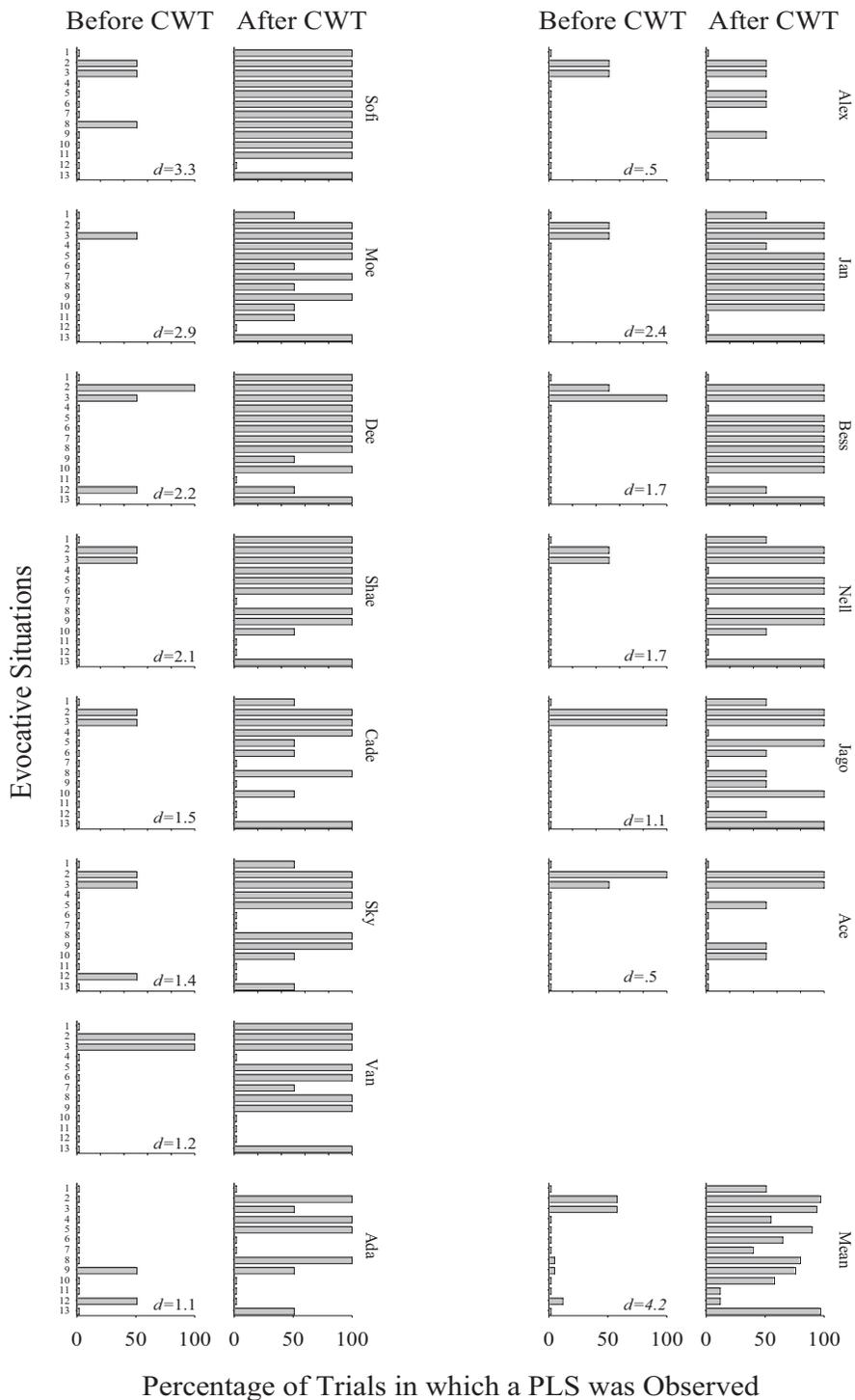


Figure 2. Percentage of trials in which a correct preschool life skill (PLS) was observed during pre-CWT and post-CWT assessments for each child across evocative situations. Student data are ordered by effect sizes (Cohen, 1994), with Classroom A students followed by Classroom B students. The bottom right panel shows the overall mean.

performance of the 13 skills following CWT varied considerably across children (e.g., compare Sofi's and Alex's data). A 57% reduction in overall problem behavior was also observed across students. Problems of commission were low throughout the study; nevertheless, after CWT, problems of commission remained unchanged for two children, worsened for two children, and decreased for nine children.

Despite the challenges occasioned by a different setting, different teacher-training histories, and different behavior-management strategies in the classrooms, a functional relation between the CWT program and probabilities of PLS was demonstrated as the program was sequentially introduced. By incorporating the same skills and implementation goals for CWT, the current study systematically replicated the procedures of Hanley *et al.* (2007) in a community-based Head Start program, a preschool that requires low-income family status for attendance and is associated with risk factors for social skills and language deficiencies (Qi & Kaiser, 2003).

Other questions regarding assessment integrity and feasibility still remain unanswered. For instance, the current evaluation involved daily interactions between consultants and teachers, and the necessity of these interactions on observed gains remains an important area of future research. Furthermore, the variability observed across children with respect to all targeted measures highlights the importance of supplemental small-group (Luczynski & Hanley, 2013) or individual (Francisco & Hanley, 2012) instruction.

REFERENCES

Belsky, J., Vandell, D. L., Burchinal, M., Clarke-Stewart, K. A., McCartney, K., Owen, M. T., & The NICHD

- Early Child Care Research Network. (2007). Are there long-term effects of early child care? *Child Development*, *78*, 681–701.
- Carr, E. G., & Durand, V. M. (1985). Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis*, *18*, 111–126. doi: 10.1901/jaba.1985.18-111
- Cohen, J. (1994). The earth is round ($p < .05$). *American Psychologist*, *49*, 997–1003. doi: 10.1037/0003-066X.49.12.997
- Francisco, M. T., & Hanley, G. P. (2012). An evaluation of progressively increasing intertrial intervals on the acquisition and generalization of three social skills. *Journal of Applied Behavior Analysis*, *45*, 137–142. doi: 10.1901/jaba.2012.45-137
- Hanley, G. P., Heal, N. A., Tiger, J. H., & Ingvarsson, E. T. (2007). Evaluation of a classwide teaching program for developing preschool life skills. *Journal of Applied Behavior Analysis*, *40*, 277–300. doi: 10.1901/jaba.2007.57-06
- Lin, H. L., Lawrence, F. R., & Gorrell, J. (2003). Kindergarten teachers' views of children's readiness for school. *Early Childhood Research Quarterly*, *18*, 225–237. doi: 10.1016/S0885-2006(03)00028-0
- Luczynski, K. C., & Hanley, G. P. (2013). Prevention of problem behavior by teaching functional communication and self-control skills to preschoolers. *Journal of Applied Behavior Analysis*, *46*, 355–368. doi: 10.1002/jaba.44
- National Institute of Child Health and Human Development. Early Childhood Care Research Network. (2003). Does amount of time spent in child care predict socioemotional adjustment during the transition to kindergarten? *Child Development*, *74*, 976–1005.
- Porterfield, J. K., Herbert-Jackson, E., & Risley, T. R. (1976). Contingent observation: An effective and acceptable procedure for reducing disruptive behavior of young children in a group setting. *Journal of Applied Behavior Analysis*, *9*, 55–64. doi: 10.1901/jaba.1976.9-55
- Qi, C. H., & Kaiser, A. P. (2003). Behavior problems of preschool children from low-income families: Review of the literature. *Topics in Early Childhood Special Education*, *23*, 188–216. doi: 10.1177/02711214030230040201

Received July 13, 2013

Final acceptance July 25, 2013

Action Editor, Rob Horner

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