

# Including Parent Training in the Early Childhood Special Education Curriculum for Children With Autism Spectrum Disorders



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**Abstract:** Parent training has been shown to be a very effective method for promoting generalization and maintenance of skills in children with autism. However, despite its well-established benefits, few public school programs include parent training as part of the early childhood special education (ECSE) curriculum. Barriers to the provision of parent training include the need for parent education models that can be easily implemented in ECSE programs and the need for preparation of special educators in parent education strategies. This article describes a parent training model for children with autism developed for use in ECSE programs. The implementation of the program, teacher preparation, and preliminary outcomes and challenges will be discussed.

The importance of training parents as intervention providers for their child with autism was first emphasized by Lovaas and colleagues when they noted that, following intensive treatment, children whose parents were trained to carry on the intervention continued to make gains, whereas children who were returned to an institutional setting lost their previously acquired skills (Lovaas, Koegel, Simmons, & Long, 1973). Since then, parents of children with autism have been successfully taught a variety of intervention techniques to improve the parent-child relationship (e.g., Koegel, Bimbela, & Schreibman, 1996, Mahoney & Perales, 2003), increase communication skills (e.g., Harris, 1986), and decrease inappropriate behavior (e.g., Marcus, Lansing, Andrews, & Schopler, 1978). Teaching parents to provide the intervention has been shown to increase generalization and maintenance of skills over time (e.g., Koegel, Schreibman, Britten, Burke, & O'Neill, 1982). Parent training also improves the quality of life for the family by reducing parental stress (Koegel et al., 1996) and increasing parental leisure and recreation time (Koegel et al., 1982). In addition, parents who participate in parent training programs report more optimism about their ability to influence their child's development (Koegel et al.,

1982), which may help parents sustain their efforts with their child over time.

Even though parent training is now considered an essential component of successful intervention programs for children with autism (National Research Council, 2001), it is rarely included in publicly funded early childhood special education (ECSE) programs (Mahoney et al., 1999; McCollum, 1999). Obstacles to providing parent training mainly relate to issues of dissemination and training. Most evidence-based parent training models are not accessible to teachers, who may not read empirical journals that do not target practitioners. In addition, teachers are rarely trained in how to use parent education strategies. Most special educators, especially those who work with children ages 3 and older, have been trained to work with children, not adults. They lack the knowledge of how adults learn and the techniques for teaching parents specific skills (Mahoney et al., 1999). Finally, there is a lack of fit between current empirically based parent education models and the structure of the majority of ECSE programs for children with Autism spectrum disorders (ASD). Most empirically based parent training models are conducted individually with the parent, child, and parent educator

once to twice a week over many months (e.g., Alpert & Kaiser, 1992; Koegel & Schreibman, 1996; Mahoney, 2004a, 2004b). However, ECSE for children with ASD is typically provided in a classroom setting that allows very little time for teachers to meet individually with the parent and child. This difference makes it difficult for most special educators to envision using these models within their programs.

In order for parent training to be accepted as a legitimate and necessary component in the education of preschool-age children with ASD, researchers need to provide parent training models that can be easily adopted by special educators working within the public system. In addition, special educators need to be provided with explicit instruction in which strategies to teach parents, how to work with families, adult learning strategies, and coaching skills. The purpose of this article is to (a) describe a parent training program for families of preschool-age children with ASD designed for use in public ECSE classrooms, (b) describe the implementation of this model in a preschool classroom and how teachers were trained to use it, (c) describe the outcomes of the pilot program, and (d) discuss the outcomes and implications of implementing this model in the public schools.

## Context of Program

This program was implemented as part of the Oregon Statewide Regional Program Autism Training Sites (RPATS). RPATS was established as a collaborative effort among Portland State University, the Oregon State Department of Education, and Oregon Regional and Special Education Programs in an effort to improve the quality of education for students with autism in the state. Several classrooms in each region were selected as model RPATS sites. Teachers at these sites receive intensive, hands-on training in research-based practices for children with ASD. After training, other teachers working with children with ASD in the region can visit the model sites to learn how to implement the interventions in their own classrooms.

RPATS provides an excellent model for disseminating information to teachers across the state. For this reason, we chose to pilot the parent training program in two preschool RPATS classrooms. In the pilot program, the group sessions were conducted in the classroom in the evening. The coaching sessions were conducted in the classroom during the school day. On these days, school was canceled. This format made it possible for the teachers to provide coaching to each family on the same day (the district was very large, making individual home visits for children ages 3 and up who attend a classroom-based program unfeasible). The teachers felt that having the coaching sessions at school during the day would allow them to use this model in the future. The individual parent coaching sessions were written into the Individualized Family Service Plan (IFSP)

of each child in the two classrooms, although some parents chose not to take advantage of the program.

## Method

### PARTICIPANTS

All families of children participating in the two RPATS ECSE classrooms were asked to participate in the parent training program. Out of a total of 12 families (six children in each classroom), 9 families chose to take part. One family did not participate because they had already received individualized parent training from one of the authors. Another family did not participate because the family was non-English speaking and a translator was not available. The third family did not specify why they did not participate. Of the participating families, 5 attended all group and individual sessions, while the other 3 attended the majority, but not all of the sessions. One family dropped out after the second session because the father had surgery.

All participating children were 3 or 4 years old and had an educational eligibility of ASD. The participating parents ranged in age from early 20s to mid-40s and represented a wide range of educational and income levels. One set of parents had previously received some parent coaching using the same strategies in a toddler classroom offered through the district. None of the other parents had participated in any formalized parent training programs. The participating teachers included two early childhood special education teachers, one speech-language pathologist and one occupational therapist, both of whom consulted to the classrooms, and the regional autism specialist (see Table 1).

Both classrooms used the STAR Curriculum with their students (Arick, Loos, Falco, & Krug, 2004), which is based on the principles of applied behavior analysis and includes three instructional formats: discrete trial training, pivotal response training (PRT), and functional routines. Therefore, the teachers had experience implementing the naturalistic behavioral strategies (via PRT) of the parent program but not the developmental strategies. They had not previously received training in any other parent training programs. The speech pathologist had over 30 years of experience and was trained in the Hanen approach; she was thus familiar with all of the intervention strategies as well as parent training.

### CONTENT OF PARENT TRAINING CURRICULUM

The parent training curriculum was developed by the authors for families of young children with ASD. The parent training curriculum focuses on teaching families naturalistic intervention techniques to increase their child's social-communication skills during daily activities and routines. The intervention is composed of two primary teaching

techniques: developmental (e.g., Mahoney, 2004a, 2004b) and naturalistic behavioral (e.g., Kaiser, Yoder, & Keetz, 1992) strategies, which we refer to as *indirect* and *direct* teaching strategies, respectively (see Table 2). These strategies were selected from intervention techniques shown to be effective for teaching social-communication skills to children with autism and other developmental disabilities in a parent training context. A combination of approaches was chosen because developmental and naturalistic behavioral strategies are compatible (both begin with following the child's lead), and each focuses on improving a different set of skills considered important for young children with autism. For example, developmental strategies are specifically focused on improving parent-child interactions, whereas naturalistic behavioral strategies are specifically focused on teaching novel language and play skills. Each teaching strategy is outlined in a parent manual designed for this program that was adapted from the manual used at the Hearing & Speech Institute in Portland, Oregon (Ingersoll & Dvortcsak, 2003).

### Indirect Teaching Strategies

The indirect teaching strategies are derived from developmental interventions such as Hanen (Manolson, 1992), Responsive Teaching (Mahoney, 2004a, 2004b), and Floor Time/DIR (Greenspan & Wieder, 1998). Developmental interventions are based on research that indicates a moderate relationship between caregivers' responsivity and their child's level of social-communication development (Prizant, Wetherby, & Rydell, 2000). These strategies have been shown to increase social responsiveness (Mahoney & Perales, 2003) and language skills in children with autism (e.g., Ingersoll, Dvortcsak, Whalen, & Sikora, 2005; Mahoney & Perales, 2003) and other developmental disorders (Kaiser et al., 1996). The indirect techniques are used during child-directed activities to enhance the parent's responsivity to their child's behavior. Teaching follows the child's lead, all communicative attempts are responded to as if they were purposeful, and verbal input is adjusted to facilitate communicative growth (Prizant et al., 2000). These strategies were not currently being used in either classroom.

### Direct Teaching Strategies

The direct teaching strategies are derived from naturalistic behavioral interventions such as incidental teaching (Hart & Risley, 1968; McGee, Krantz, & McClannahan, 1985), milieu teaching (Alpert & Kaiser, 1992), and PRT (Koegel, O'Dell, & Koegel, 1987; Koegel et al., 1989). These interventions are based on learning theory and use prompting, shaping, and reinforcement within natural contexts to teach specific social-communication skills. These strategies have been found to be effective for teaching language (see Kaiser et al., 1992, for review), play (Stahmer, 1995), and imitation (Ingersoll & Schreibman, in press) in chil-

**Table 1. Participant Demographic Information**

Participant	Measure
<b>Children</b>	
Eligible children (children in class)	<i>n</i> = 12
Participating children	<i>n</i> = 9
Average age at program entry	3 years 0 months
Gender	8 boys, 1 girl
Average hours of instruction/week	13 hours
Ethnicity	All Caucasian
Language level	
Nonverbal	22%
Single words	44%
Phrase speech	44%
Complex language	33%
<b>Parents</b>	
One parent	56%
Both parents	44%
Marital status	
Married	89%
Divorced/separated	11%
Education level	
High school diploma/GED	54%
Some college/trade school	0%
College degree	38%
Advanced degree	8%
Sessions attended	
Group	83%
Individual	67%
<b>Teachers</b>	
Special educators	2
Speech-language pathologists	1
Occupational therapists	1
Other	1
Gender	0 men, 5 women
Years of teaching experience	
< 5	20%
5–10	40%
11–20	20%
> 20	20%
<b>School</b>	
Average class size	6 students

dren with autism and developmental delay. These strategies were being used in both classrooms during the PRT portion of the STAR Curriculum.

### PARENT TRAINING PROTOCOL

The parent training program was designed to be conducted once a week over 9 weeks in six group sessions of 1½ hours and three individual sessions of 45 minutes each with each parent and child. In the pilot program, all group sessions and the first two parent coaching session were conducted by the authors while the teachers observed. The final coaching session was conducted by the teachers with feedback provided by the authors.

**Table 2. Parent Training Curriculum**

Session	Topic	Reference for techniques
Week 1 (Group)	Overview of the program: (a) research on parent training, (b) goals and format of parent training program, (c) overview of the intervention techniques, (d) social-communication goals	
Week 2 (Group)	Following your child's lead and making it interactive: (a) following your child's lead, (b) joining in your child's play, (c) imitating your child, (d) being animated, (e) engaging in playful obstruction	Greenspan & Wieder, 1998; Ingersoll et al., in press; Ingersoll & Schreibman, in press; Kaiser et al., 1996; Mahoney, 2004b.
Week 3 (Group)	Modeling and expanding language and play: (a) using indirect language stimulation, including self-talk, parallel-talk, and conversational recasts; (b) modeling appropriate play skills; (c) treating actions as purposeful	Camarata, Nelson, & Camarata, 1994; Kaiser et al., 1996; Ingersoll et al., in press; Ingersoll & Schreibman, in press; Prizant et al., 2000.
Week 4 (Individual)	Parent coaching on the use of indirect techniques	
Week 5 (Group)	Environmental arrangement: (a) setting up the environment at home for success; (b) using various environmental arrangement strategies, including in sight-out of reach, inadequate portions, sabotage, assistance, silly situations	Kaiser, Ostrosky, & Alpert, 1993.
Week 6 (Group)	Prompting and reinforcement: (a) using a variety of natural environment prompts including models, choices, mand-model (questions), CLOZE procedure, and time delay; (b) using natural reinforcers	Kaiser et al. 1993; Koegel et al., 1987; McGee et al., 1985.
Week 7 (Individual)	Parent coaching on the use of direct techniques	
Week 8 (Group)	Putting it all together (a) review of the direct techniques, (b) when to use indirect and direct techniques, (c) how to use them together	Kaiser, Hancock, & Nietfeld, 2000.
Week 9 (Individual)	Parent coaching on the use of the entire procedure	

### Format of Group Sessions

Each group session consisted of a didactic presentation, videotaped examples, and group discussion and problem solving. The first session consisted of an initial didactic presentation that reviewed the research on parent training for children with autism, an overview of the intervention techniques parents would be learning, and a description of the parent training program. Parents then developed individual goals for their child with the help of the parent educator. Goals were developed by having the parents complete a skills checklist that covered social engagement, language, and play and imitation skills. Parents indicated whether their child used each behavior (a) *usually* (at least 75% of the time), (b) *sometimes, but not consistently*, or (c) *rarely or not yet*. The parent and parent educator then developed the child's goals together by reviewing the parent's checklist and the child's IFSP goals. Parents were asked to select no more than four social-communication goals to target over the 9 weeks.

After the first session, all subsequent sessions began with a 20-minute discussion of the parents' use of the different intervention strategies in the home. After the initial discussion, the parent educator conducted a 60-minute didactic presentation of the next intervention strategies. Indirect teaching strategies were presented first, followed by the direct teaching strategies, with later strategies building upon early strategies. All presentations were augmented with videotaped examples of intervention providers and other parents using the strategies with children with ASD.

At the end of each group session, parents were given homework. The homework consisted of having parents write down one to two of their child's goals, activities they typically did with their child, which intervention technique they would use, and their child's expected response. Parents were then instructed to go home and practice those techniques over the next week with their child and record how their child responded. As new intervention strategies were presented, the homework was updated.

### Format of Individual Sessions

Each parent and their child participated in three coaching sessions of 45 minutes each with the parent educator. The coaching sessions were interspersed with the group sessions to provide parents with opportunities to practice techniques covered during the group sessions and receive feedback. In each coaching session, the parent observed as the parent educator modeled the target techniques with the child for 5 to 10 minutes. The parent then practiced the techniques with his or her child while receiving feedback from the parent educator. At the end of each session, the parent educator and the parent discussed how to use the techniques in the home to target the child's social-communication goals and the parent completed the homework sheet.

### TEACHER TRAINING PROTOCOL

The parent and teacher training occurred concurrently to provide teachers hands-on learning opportunities. The teacher preparation consisted of didactic and hands-on training in using the parent training model. The authors conducted an initial 6-hour workshop for all of the teachers in the region who would be using the program. The workshop provided an overview of parent training, research on the effectiveness of parent training for children with ASD and their families, and the intervention strategies. It then focused on specific skills that are involved in presenting information and providing online feedback to parents during coaching sessions (see Table 3).

Teachers participating in the pilot program then received hands-on training in the implementation of the model. These teachers observed the authors conduct all of the evening group sessions with the parents. During the group sessions, the teachers assisted with goal development and participated in the group problem-solving discussions. The teachers also observed the authors conduct the first two parent coaching sessions. During these sessions, the teachers wrote down feedback they would have provided the parents using a parent feedback form designed for this program. During the third coaching session, the teachers modeled the techniques and provided feedback to the families of the children in their class. After these individual coaching sessions, the authors provided feedback to the teachers on their coaching.

The entire training required roughly 50 hours of each teacher's time, which included the workshop, participation in the group sessions (2.5 hours per group session, which included setup and debriefing, for a total of 15 hours), the full-day individual coaching sessions (7 hours per individual session, which included setup and debriefing, for a total of 21 hours), and an additional 8 hours worth of planning meetings and preparation time. Of this time, roughly 18–20 hours were conducted outside of the typical school day (i.e., evening groups).

### FUTURE TRAINING

The teaching staff who participated in the full training will continue to conduct the training with families of the stu-

**Table 3. Parent Coaching Strategies**

Topic	Description
Building rapport	(a) Make eye contact and use balanced turns in conversation, (b) be competent and confident but do not look better working with the child than the parent, (c) point out what the parent is doing correctly, (d) acknowledge parent's feelings of guilt and/or frustration, (e) listen to parent's concerns, (f) remain professional, (g) avoid alliances with one parent against the other.
Reviewing information	(a) Present only a few techniques at a time, (b) give the rationale behind the technique, (c) describe the critical elements of technique, (d) check for understanding, (e) discuss how the technique can be used to target child's goals.
Modeling techniques	(a) Model the technique with the child while the parent watches, (b) make sure the modeling takes up no more than 25% of the session, (c) use role-playing with the parent if he or she is having difficulty using the technique with the child. Providing feedback
Providing feedback	(a) Provide feedback that is succinct but specific, (b) focus more on positive than corrective feedback, (c) respond to almost everything the parent does (at least one comment every minute), (d) give feedback on only a limited number of techniques per session. Building independence
Building independence	(a) Discuss how to use the technique at home, (b) assign homework, (c) increase the amount of time the parent is working with the child, (d) decrease feedback and proximity to the parent and child, (e) have the parent practice across different settings and activities.

dents in their classrooms in the next school year, and the authors will begin the hands-on training at subsequent RPATS sites across the state. As part of the RPATS, the participating teachers will provide training in the model to additional educators in the region, so that other teachers will be able to implement the parent training program with their students with ASD.

## Results

As part of the pilot project, we collected several outcome measures to assess the benefit of the program.

Timmy has difficulty interacting with other people and prefers to play alone. Timmy has some single words and uses several gestures to communicate. His mother is trying to increase Timmy's use of single words and interaction skills. Timmy is playing with a small, red truck on the kitchen floor while Timmy's mom is making popcorn.

1. Select the best example for Timmy's mother to use to get Timmy to engage with her.
  - A. Give Timmy some popcorn.
  - B. Tell Timmy, "Look, I'm making popcorn."
  - C. Give Timmy another truck to play with.
  - D. **Block Timmy's play with the truck by standing in his way.**
2. Select the best example of language modeling for Timmy.
  - A. "Hey Timmy, look at the popcorn."
  - B. **"Truck. Red truck."**
  - C. "I'm making popcorn."
  - D. "You have a small, red truck."

Khari is eating dinner with her family. Khari is nonverbal and is not yet able to consistently communicate her wants or needs. Her parents are trying to get Khari to indicate what she wants using gestures.

3. Select the best way for Khari's mom to teach her to point.
  - A. **Mom offers Khari milk and water and waits for her to reach for one. Then she helps her point.**
  - B. Mom gives Khari milk while saying "milk."
  - C. Mom makes Khari point to the milk while she is drinking it.
  - D. Mom tells Khari, "Point to your nose."
4. Select the best way for Khari's dad to encourage Khari to communicate.
  - A. Dad serves her dinner while saying, "Here is your dinner."
  - B. Dad serves her a small portion of her meal and leaves the rest in the kitchen.
  - C. **Dad serves her a small portion of her meal and holds the rest where Khari can see it.**
  - D. Dad asks Khari, "What are you eating?"

**Figure 1.** Sample pre-post quiz items. (Correct answers appear in boldface.)

## INCREASES IN PARENT KNOWLEDGE

To determine whether parent knowledge regarding the intervention techniques increased, we administered a pre-post quiz. The quiz included 10 multiple choice items that addressed how to implement specific treatment strategies in natural contexts (see Figure 1). Prior to training, the parents received an average score of 29% correct (range 0%–60%). After training, the parents received an average score of 75% correct (range 40%–100%).

## PARENT SATISFACTION SURVEY

At the end of training, parents were asked to complete a satisfaction survey regarding the program. This survey asked parents to respond to statements about the training using a 7-point Likert-type rating scale (1 = *strongly disagree*; 4 = *neither agree nor disagree*; 7 = *strongly agree*). Overall, parent ratings were positive (see Table 4). Parents felt strongly that their child improved his or her social engagement and communication skills as a result of the program. Parents felt less strongly that they understood what skills their child was working on and why, and how to address different goals they had for their child during everyday activities. On average, parents felt that the time and the format of the program were appropriate and that the different components of the program (i.e., written materials, presentations, homework, and parent coaching) were helpful; parents were least positive about the homework assignments and most positive about the parent coaching. Parents reported that both they and their child enjoyed the program.

## TEACHER SATISFACTION SURVEY

Teachers were also asked to complete a satisfaction survey regarding the parent training program at its conclusion. This survey used the same 7-point Likert-type rating scale as the parent satisfaction survey. The teachers' responses were uniformly positive (see Table 5). The teachers felt that both the participating parents' ability to promote their children's skills at home and the children's engagement and communication skills improved. They also felt that the training format was appropriate and the amount of time they spent as part of the training was manageable. In addition, the teachers reported that the training they received adequately prepared them to use the program. Finally, the teachers unanimously agreed strongly that the program was a beneficial addition to the current classroom curriculum, that they could see themselves using this program with the children in their class in the future, and that they would recommend this program to others.

Teachers were also asked to answer three open-ended questions regarding the parent training program: (a) What aspects of this training went well? (b) What aspects of this training would you like to see change? and (c) What barriers

**Table 4. Average Ratings on the Parent Satisfaction Survey**

Statement	M (range)
I feel my child improved her or his social engagement as a result of this program.	6.2 (4.5–7)
I feel my child improved her or his communication/language skills as a result of this program.	6.3 (5–7)
I understand which skills my child was working on and why.	5.7 (3–7)
I understand how to use the techniques at home during everyday activities to address different goals I may have for my child	5.3 (3–7)
The written material was clear, understandable, and helpful.	5.9 (5–7)
The presentations were clear, understandable, and helpful.	6.1 (6–7)
The homework assignments were clear and manageable.	5.7 (4–7)
The parent coaching was clear, understandable, and helpful.	6.7 (6–7)
The format of the program was appropriate (6 group sessions, 3 individual sessions).	5.9 (4–7)
The time of the program was appropriate (evening group, daytime coaching).	6.7 (6–7)
The trainers were knowledgeable.	6.7 (6–7)
I enjoyed this program.	6.7 (6–7)
I feel my child enjoyed this program.	6.4 (5–7)

Note. 1 = strongly disagree; 4 = neither agree nor disagree; 7 = strongly agree.

**Table 5. Average Ratings on the Teacher Satisfaction Survey**

Statement	M (range)
The participating parents improved their ability to promote their child's learning at home as a result of this program.	6.3 (6–7)
The participating children improved their engagement and communication skills as a result of this program.	6.0 (5–7)
The written material was clear, understandable, and helpful.	7
The presentations were clear, understandable, and helpful.	7
The parent coaching was clear, understandable, and helpful.	6.7 (6–7)
The format of the program was appropriate (6 group sessions, 3 individual sessions).	6.3 (6–7)
The time of the program was appropriate (evening group, daytime coaching).	7
The training I received (initial workshop, observing group and coaching sessions, meetings with trainers, coaching on giving feedback) adequately prepared me to use this program.	6.7 (6–7)
The amount of time I spent as part of this training was manageable.	7
This program is a beneficial addition to the current classroom curriculum I use.	7
I can see myself using this program with children in my class in the future.	7
The trainers were knowledgeable.	7
I would recommend this program to others.	7

Note. 1 = strongly disagree; 4 = neither agree nor disagree; 7 = strongly agree.

ers do you see to using this program in your classroom in the future? In response to the first question, teachers felt that the information presented was relevant for families, improved the parents' skills, and helped with the children's generalization of skills to the home. Teachers also reported that they enjoyed the teaching format and found the parent coaching and consultation time with the trainers to be

highly valuable. Further, all teachers indicated that they would prefer longer and possibly more parent coaching sessions, as they felt that the parent coaching led to the greatest improvements in the parents' skills. Finally, in response to what barriers the teachers saw to using this program in their classroom in the future, all teachers reported that their main concern was consistent parent attendance.

## Discussion

Despite the generally positive responses we received, several issues arose during the implementation of the pilot project that should be addressed. First, although several accommodations were made to encourage parent participation, including providing both evening and day sessions, only 75% of the families chose to participate at all and, of these, only 56% participated in the entire program. Participating teachers indicated lack of parent participation as a significant impediment to the success of this program. This project did not provide childcare during the evening groups, which may have prevented some families from participating on a regular basis. Although it would be difficult to find a time in which all parents could (and would) attend, it is likely that offering childcare might increase the attendance rates of families.

Second, all of the individual coaching sessions were held at the school on the same day to facilitate teacher use of the intervention model. Given the size of the district, home visits were viewed by teachers as a barrier to their ability to implement the program in the future. However, parents were least positive in their response that they understood how to use the techniques at home during everyday activities. This response suggests that coaching provided in the home may be more effective than in the school. Home visits are more manageable in smaller than in larger districts. One option is to include in the video clips shown during group training sessions examples of parents using the techniques during daily routines in the home, rather than just during play.

Third, it is unknown whether this parent training model, which includes a significant portion of group instruction, is equivalent to parent training models that are conducted individually with the parent, child, and parent educator. Indeed, all teachers and one parent reported that more coaching sessions would have resulted in better parent learning. Our choice of providing three coaching sessions was based on the preferences of school administrators, who were concerned about canceling more than 3 days of instruction. As with any program, the needs of those receiving the service (children and their families) must be balanced with the needs of those providing it (teachers and school administrators). Therefore, although additional coaching sessions and conducting coaching in the home might be more effective for families, they might also limit teachers' ability or willingness to use the model over time. With this in mind, we feel that the addition of one extra coaching session after the second group session and the provision of the final coaching session in the home would increase parent performance and still remain acceptable to teachers and administrators. Future research should investigate optimal parent training formats for school programs, in terms of both gains in parent knowledge and teacher implementation.

Fourth, this model was conducted at a site that may have been atypical of ECSE classrooms in that significant hands-on training in the use of research-based practices for children with autism had occurred there. In addition, this classroom was designed for children with autism and had small student numbers. In classrooms with less teacher expertise in autism interventions, the teachers may need to receive initial training in the intervention strategies themselves prior to receiving training on how to conduct parent coaching. In classrooms with higher student numbers, the course could be offered more than once throughout the year, so that all families would have the opportunity to participate. Given that the parent coaching strategies are appropriate for children with a range of disabilities, we believe that the use of this model with a mixed-disabilities classroom would still be appropriate.

Finally, the number of hours each participating teacher invested in this program was significant (50 hours). Trained teachers will spend roughly 36 hours to implement the program in the future, 15 of which will be outside of the regular workday. In addition, as this program is part of the RPATS program, teachers who have already been trained in the model will have the responsibility to train new teachers, which will require significantly more time than implementing the program with parents. Although all participating teachers felt strongly that they would use this program again in the future, most expressed concern about the amount of time that training other teachers would take.

In summary, we have described a model for training parents to use empirically validated intervention techniques with their child with ASD that can be implemented by educators within a publicly funded ECSE program. We were encouraged by both the teachers' and parents' enthusiasm for the program and the benefit they felt this program added to the children's education. However, since we did not measure changes in actual parent or teacher behavior, the utility and cost-effectiveness of implementing this model is unknown. Future empirical study is needed to determine both the short- and long-term effects of adding such a program to the special education curriculum for preschool-age children with ASD.

## ABOUT THE AUTHORS

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