

Teaching-Family Model for Autistic Children

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Alan, an autistic adolescent, had a long history of aggressive responses, such as hitting, kicking, and biting, and he had engaged in a variety of self-stimulatory behaviors, including repetitive vocal noisemaking, stereotyped finger play, and noncontextual laughing. Like many autistic youngsters, he had acquired a few words during his second year of life, but these later disappeared from his repertoire. Alan was able to undress himself, but he needed assistance with dressing; he drank from a cup, but did not use utensils. He displayed gaze aversion, and was unable to follow simple directions. When last tested, he had achieved a social quotient of 31 on the Vineland Social Maturity Scale.

For approximately half of his life, Alan lived in a large institution. He slept, ate his meals, and spent most of his time in a ward environment, and he attended the institutional school. At age 13, after more than 6 years of institutionalization, Alan moved to a *Teaching-Family Model* group home for autistic youth. He was not specially selected for this placement; indeed, he was identified as eligible solely on the basis of

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his tenure in an institutional program for autistic youngsters. Further, he received no special instruction or transition programming prior to his relocation; he simply moved from an institution to a home environment on the appointed day when his teaching parents were prepared to receive him into their "family." Upon his arrival in his new home, Alan's ties to the institution were completely severed. Under no circumstances would he return there; instead, it was assumed that he would remain in the group home for as long as he needed the treatment services provided there.

Alan is representative of 25 youngsters who, between 1977 and the present, have received treatment services in Teaching-Family-Model group home programs that were designed specifically for autistic youth. Before 1977, however, there were no models of community-based, family-style residential treatment for autistic children, and although there had been many advances in treatment technology during the preceding 15 years (cf. Lovaas, 1977; Lovaas & Newsom, 1976; Lovaas, Koegel, Simmons, & Long, 1973; Metz, 1965; Rincover & Koegel, 1977; Risley, 1968; Risley & Wolf, 1966, 1967; Wolf, Risley, & Mees, 1964), most of the available treatment resources were of two types: day treatment programs and institutional programs. Movement of children between these types of treatment resources was mainly unidirectional—that is, as children became older or more difficult to manage, or as family resources for dealing with children's problems became increasingly strained, children often left family environments and day programs and entered residential placements in large institutions. There was no replicable technology for reintegrating autistic children into community settings or for preventing institutionalization by providing alternative placements in the community.

Although there must be hundreds of ways to design residential treatment programs for autistic youth, we were persuaded of the importance of model building. Models facilitate refinement and extension of the technology through systematic replication (Sidman, 1960). The structure afforded by a model allows the exchange and comparison of information and evaluation data across sites, preventing wasted effort in figuring out which procedures will work. Effective models also provide mechanisms for ensuring program accountability and maintaining program quality; for example, the certification standards established by the National Teaching-Family Association for teaching parents and training sites help to accomplish this goal. And, finally, models permit broad dissemination of procedures, thus increasing the impact of the technology on society's practices (Paine & Bellamy, 1982).

Thus, in the absence of a model of service delivery for autistic youth, we elected to adopt, revise, and extend an existing model of residential

treatment. The *Teaching-Family Model* for delinquent and predelinquent youth (née Achievement Place) had been the subject of more than a decade of behavioral research (cf. Braukmann, Maloney, Fixsen, Phillips, & Wolf, 1974; Braukmann, Fixsen, Kirigin, Phillips, Phillips, & Wolf, 1975; Kifer, Lewis, Green, & Phillips, 1974; Kirigin, Ayala, Braukmann, Brown, Minkin, Fixsen, Phillips, & Wolf, 1975; Kirigin, Wolf, Braukmann, Fixsen, & Phillips, 1979; Phillips, 1968; Phillips, Phillips, Fixsen, & Wolf, 1971; Willner, Braukmann, Kirigin, Fixsen, Phillips, & Wolf, 1977), and it offered technologies for training and evaluating treatment personnel, designing special motivational systems and skill acquisition programs, tracking child progress, and securing consumer and professional evaluations of program services.

Although extension of an existing model may not be as "glamorous" as the design of a totally new treatment program, this manner of proceeding does have certain powerful advantages, not the least of which is the existence of a set of program parameters that may be used as guidelines in pursuing each new application or extension.

1. Teaching-Family Model for Autistic Children

1.1. Program Parameters

Like the original model, the *Teaching-Family Model for Autistic Children* is community based, has a family-style atmosphere, and is consumer oriented. Table 1 displays the basic dimensions of the model. Because of children's needs for intensive intervention, no more than 4 or

Table 1. Dimensions of Teaching-Family Model for Autistic Children*

Few youths per home
Live-in teaching parents
Family style
Treatment internal to the home
Specific curriculum
Low tolerance for youth deviance
Frequent contacts between teaching parents and school personnel
Training services for natural parents
Specific-skill training for teaching parents
Many feedback loops
Consumer oriented
Objective program evaluation
Professional status for teaching parents

*Adapted from D. E. Weber, R. B. Lassiter, L. T. Thompson, K. B. Blase, P. Strawhecker, M. E. Graham, K. Carlson, C. H. Bier, S. E. Domet, and E. L. Gollehan, *The Group Home Development Workshop Manual*. Boys Town, Nebr.: Father Flanagan's Boys' Home (Youth Care Department), 1980.

5 autistic youngsters reside in a group home with their teaching parents, a married couple. The teaching parents are assisted by 2 or 2½ associate therapists who do not live in the home, but are employed there on a regular basis. Teaching parents participate in the selection and hiring of associate therapists, and ultimately become responsible for their training and supervision.

There is an existing literature relevant to teaching-parent selection and teaching-parent longevity (cf. Lassiter, 1978; Warfel, Maloney, Maloney, Fixsen, & Timbers, 1978). In addition, several other factors appear important in selecting teaching parents who will be providing services for autistic children. It is helpful if at least one member of the couple has had some experience with developmentally disabled persons. This contributes to realistic expectancies about their work responsibilities and life-style as teaching parents. Couples who do not exhibit highly differentiated sex role performance may also experience a greater measure of success (over a period of time, it can be quite wearing to be identified as the individual who must *always* cook for a family of seven, or manage the aggressive behavior of a child). The ability to display behavior change in response to corrective feedback delivered during the selection interview also appears to be a predictor of future job success. A final cluster of variables, although difficult to assess, is also significant—the degree of initial *liking* between teaching parents and the individual who will be their trainer/consultant. Particularly during the early months of their employment, novice teaching parents will be dependent upon the consultant to help them through some difficult times as they adjust to their new jobs and learn to deal with youth problems. In the absence of positive relationships that generate social reinforcers, some couples may not survive this initial adjustment period.

Homes are selected because they are similar to the dwellings enjoyed by other advantaged youth in the community. Ranch-style homes appear to be particularly favorable to treatment programming because their floor plans often include a circular design that facilitates observation and supervision of children. In addition, single-story structures often meet state and local licensing standards without extensive renovation. Although large lawns, flower gardens, and swimming pools have their benefits, they also result in more maintenance activities for teaching parents. Fenced outdoor play areas, however, are functional because they permit teaching parents to begin teaching recreational skills without being unduly concerned that children may leave the yard or become too intrusive in the neighborhood. Although teaching parents need separate living quarters that assure their privacy during times when they are not scheduled to work with children, provision must also be made for adequate nighttime supervision. It has therefore been useful

to install floormat-buzzer systems, so that an audible signal will alert the teaching parents if a youth leaves his or her bedroom after bedtime. A home serving five youths might have three bedrooms for them—two doubles and one single. The availability of a single room permits teaching parents to work on one child's bedtime disruptive behavior or nighttime toileting skills, without awakening other children.

Because autistic youth often display severe difficulties in generalizing their new skills across settings, it is important that they acquire home-living skills in a typical home environment, rather than in a setting that resembles a clinic, school, or ward. Thus, ordinary home furnishings are provided. Each youth has his or her own bed, dresser, and desk or work space; the kitchen has homelike, rather than institutional, appliances; meals are served family style, and the family eats around a single table. End tables, chairs, and sofas are of ordinary construction. Because it is not unlikely that, in the course of acquiring family-living skills, the youths' disruptive behaviors may result in damage or breakage, the annual budget for the home should underwrite this possibility.

No psychologists, speech therapists, recreation therapists, or others visit the homes to provide services to children; instead, the teaching parents and their associate therapists are the primary treatment agents. With the help of their consultants, teaching parents specify target behaviors, develop individualized programs for their youths, collect and graph daily observational data on child performance, implement children's intervention programs, and train their associate therapists to engage in these activities. Teaching parents construct their work schedules to assure that there will be many days each month when they will be working side by side with their associates, in order to promote consistency in the implementation of the children's programs.

Teaching parents are responsible for teaching the full range of home- and community-living skills, including language and social interaction skills, recreation and leisure activities, self-care and hygiene, home maintenance and housekeeping, and community-participation skills. An essential vehicle for providing such instruction is a daily activity schedule that specifies the learning activities each youth will engage in during each half hour of the day.

This strong emphasis on building specific home- and community-living skills is accompanied by low tolerance for children's deviant responses. Teaching parents' tolerance levels play a role in their selection and also become a topic of their continuing training. Thus, teaching parents do not view their youths as unfortunate, disabled people who should be sheltered from the problems of daily living, but as responsible family members who *can* learn to control their problem behaviors and who need not eat with their fingers at dinnertime, make vocal noise in

the supermarket, or engage in self-stimulatory finger play during a family outing in the van.

Because of autistic youths' previously mentioned difficulty in transferring newly acquired skills across settings, teaching parents must develop good relationships with school personnel and interact frequently with the children's teachers. If school and group-home programs are under the same administrative umbrella, home and school intervention activities can be closely coordinated, and response generalization can be programmed by arranging for children to earn rewards at the group home for their good performances at school, and vice versa. As children advance, such programs begin to resemble the school note systems characteristic of the original model (Bailey, Wolf, & Phillips, 1970).

An important goal of the Teaching-Family Model for Autistic Children is to help children maintain ties with their own families and home communities. Thus, the children visit their own homes approximately every other weekend as well as for holidays, vacations, and other special occasions. In addition, parents are encouraged to visit the group home as frequently as possible. If a referred child has no natural parents, vigorous attempts are made to identify relatives, foster parents, or others who can provide a home and neighborhood for the child to visit, so that he or she can maintain contact with his or her own local setting.

Teaching parents and associate therapists provide parent-training services both at the group home and in children's own homes on a regular, ongoing basis. These training services are designed to help parents acquire skills as home tutors and therapists for their own children (McClannahan, Krantz, & McGee, 1982). Parent participation in children's intervention programs contributes to their success during home visits, and plays a significant role in the development of more rewarding and normalized relationships between youths and their parents, thus preserving the option that they may someday reside again with their own families. The existence of this possibility and the rebuilding or maintaining of family ties helps to differentiate community-based programs from miniinstitutions.

Given the broad range of responsibilities that characterizes the role of a teaching parent, specific skill training is essential. In addition to preservice and inservice workshop experiences, teaching parents also receive ongoing hands-on training, delivered by their consultants.

Teaching-family homes for autistic youth are not without problems. Neighbors are usually uncomfortable during the home's start-up period, and licensing agents and social service agency representatives may be uncertain as to whether severe-behavior-problem children should be served in community-based programs. Because of children's affective deficits and disruptive behaviors, parents and teachers may experience

periods of disappointment and disengagement (McClannahan & Krantz, 1981); and due to the stresses imposed by their work responsibilities, teaching parents occasionally feel overburdened and undersupported. These normal and predictable difficulties underline the importance of the multiple feedback loops that are inherent in the model. Such feedback loops are mainly of two types: (1) teaching parents, consultants, and program managers receive specific training in a set of professionalism skills (i.e., skills related to giving, inviting, and receiving feedback about their programs and performances); and (2) an extensive consumer evaluation technology is regularly used to secure the input of parents, teachers, neighbors, social agency representatives, board members, program managers and other community representatives, as well as to assess teaching parents' satisfaction with their consultants and program managers (Davis, Warfel, Maloney, Maloney, & Fixsen, 1979). This consumer orientation is important because it keeps the program responsive to community members and clients' representatives.

Because the primary consumers of program services—autistic youths—are in a particularly poor position vis-à-vis the protection of their own rights, community and professional evaluation of the group home take on added significance. In the Teaching-Family Model for Autistic Children as well as in the original model, teaching parents must meet preestablished performance criteria on an objective evaluation in order to obtain certification by the National Teaching-Family Association. Although the specific performance criteria for teaching parents of autistic children differ from those that apply to teaching parents working with other child populations, the quality control functions operate similarly in both cases. And because certification is granted only to those teaching parents who achieve skill-based criteria, these individuals' professional status in the field of human services is well documented. It is noteworthy that, during periods of rising unemployment and economic uncertainty, teaching parents have continued to enjoy excellent career opportunities.

1.2. The Children

Of the 25 youths who received services in teaching-family homes between 1977 and 1982, all had been diagnosed as autistic by an outside agency, or had been in previous placements that were identified as programs for autistic children. At the time of initial contact, the 21 boys and 4 girls ranged in age from 7 to 17 years, with a mean age of 13 years. The Vineland Social Maturity Scale was administered to 23 of the children at or before their admission to group home programs; Social Quotients ranged from 17 to 66, and the mean Social Quotient Score was 35.

Twenty of the 25 children had been previously institutionalized; the length of institutionalization ranged from 2 to 9 years, with a mean of 4.6 years. Collectively, they had accumulated 115 years of institutional living.

At intake, 18 of the 25 youths (72%) exhibited aggressive behaviors, including hitting, kicking, biting, scratching, pinching, and head butting others. Fourteen youths (56%) engaged in self-injurious behaviors such as head banging, biting, pinching, and slapping. Thirteen children (56%) were completely nonverbal, and 9 children (36%) were not yet toilet trained.

Because of the severity of the children's problems it appeared important, upon opening a new home, to arrange for children to arrive sequentially rather than simultaneously. This strategy enabled teaching parents to develop individualized programs, design an activity schedule, and acquire some measure of instructional control before the next new youth arrived. And because behavior control medications had been prescribed for many of the children, it was necessary for teaching parents to identify a local pediatrician or health clinic that could supervise the gradual withdrawal of these drugs.

Decisions about the assignment of children to homes were guided by the belief that it would be important to distribute certain child problems across homes so that, if possible, no teaching-parent couple would be asked to serve five aggressive children, or five mute children, or five children who were not yet toilet trained. It was considered important to achieve an ethnic balance and a familylike age distribution. And in addition, within each home, efforts were made to place each child with one or more other children who appeared likely to function as peers during language development, recreational, and social activities.

1.3. Workshop Training for Teaching Parents

A very substantial body of knowledge about training strategies, compiled over more than a decade, proved to be invaluable in extending the Teaching-Family Model to Autistic Children. Procedures for obtaining and scoring pre- and postworkshop videotapes of participants' performances (Collins, Brooks, Fixsen, Maloney, & Maloney, 1978), for obtaining paper-and-pencil measures of changes in participant behavior (Maloney, Bedlington, Maloney, & Timbers, 1974), and for assessing participants' satisfaction with workshop presentations (Willner, Braukmann, Kirigin, & Wolf, 1977) produced time-saving benefits, permitted exchange of information across sites, and resulted in the cooperative refinement of instruments.

Teaching parents preparing to provide services to autistic youths received a 5- to 7-day preservice workshop before beginning work with the children in their homes, as well as two inservice workshops (2 days each) during their first year of employment. Table 2 displays an outline of the substantive areas covered during preservice and inservice workshops for teaching parents. Workshops included lectures accompanied by audiovisual materials, videotaped and *in vivo* modeling of target skills, and many opportunities for behavioral rehearsals. Because of the children's severe skill deficits and behavior problems, workshops emphasized the development of applied skills and gave minimal attention to theoretical issues. Special emphasis was placed on direct observation and measurement of child performance, development of individualized programs, behavior-shaping skills, construction of child activity schedules, and use of special motivational systems. A detailed and comprehensive manual provided written training materials to accompany each workshop section as well as program software such as data sheets, individualized program

Table 2. Workshop Training Provided to Teaching Parents of Autistic Youths

Preservice Workshop (5 days of training; before couple enters home)

- Professionalism (how to invite, receive, and give feedback)
- Methodology (how to define, observe, record, and graph child behavior)
- Motivational systems
- Skill-acquisition programs
- Least-restrictive behavior reduction programs
- Activity scheduling
- Ethics/rights protection
- Data organization
- Logistics I (adult work activity schedules)
- Logistics II (children's community participation)
- Associate therapists (how to recruit, select, hire, and train)

Inservice Workshop I (2 days of training; in 5th month of training year)

- Behavior-shaping practicum
- Individualized programming
- Introduction to formal assessment
- Teaching-parent/consultant relationships
- Evaluation of teaching-family homes for autistic youths
 - Consumer evaluation
 - In-home evaluation
- Human rights review committees
- In-home accountability systems to protect youth rights

Inservice Workshop II (2 days of training; in the 7th month of training year)

- Training parents as home tutors and therapists

formats, activity schedules, and staff work schedules (McGee, Krantz, & McClannahan, 1981).

Multimeasure assessment of training effects provided both process and outcome data that were used to refine training packages, so that the Teaching-Family Model for Autistic Children became increasingly amenable to replication and dissemination. Again and again, however, the data indicated that workshop training was not sufficient. For example, pre- and postworkshop videotapes were used to assess the effectiveness of workshop training in helping teaching parents to acquire three important sets of skills: (1) using "professionalism" skills (i.e., skills in inviting, receiving, and giving feedback) to respond to community members' questions about the group home program; (2) teaching an autistic child to follow one-step directions; and (3) implementing a brief time-out from positive reinforcement procedure as a consequence for a child's disruptive behavior. The data presented in Table 3 indicate that, as a result of workshop participation, the trainees displayed significant performance gains. It must also be noted, however, that not all trainees achieved mastery of these skills. Similarly, quizzes completed by 10 teaching parents who participated in the preservice workshop yielded a mean of 66% correct on the preworkshop quizzes (range 44% to 84% correct), and a mean of 83% correct on the postworkshop quizzes (range 58% to 97% correct). Teaching parents who scored at the bottom of this range needed considerably more training in order to provide effective services to autistic youths. Thus, assessment of the effectiveness of workshop training systematically documented the importance of continued training, or consultation.

1.4. Consultation

The ongoing training or consultation included in the Teaching-Family Model for Autistic Children was based upon the original Teaching-Family Model, although the technical aspects of consultation reflected

Table 3. Trainees' Scores on Pre- and Postworkshop Videotapes of Three Teaching-Parent Activities

Assessment scenes	Preworkshop		Postworkshop		Interobserver agreement mean
	Mean	Range	Mean	Range	
Professionalism	39	27-53	61	33-93	.87
Teaching	54	33-69	74	59-95	.87
Behavior reduction	16	0-60	60	30-100	.86

Note. Maximum score = 100, *N* = 10.

the characteristics and special needs of autistic youth. Each teaching-parent couple worked closely with a consultant who maintained regular telephone contact and made frequent visits to their home. In teaching-family homes for autistic children as well as in teaching-family homes for other youths, the consultant served as teacher, integrator, and protector of the model (Smart, Maloney, Smart, Graham, Collins, Daly, Daly, Fixsen, & Maloney, 1980).

Consultants engaged in a variety of teaching activities during home visits, including participation in the design of children's individualized programs, ongoing review of such programs, and assistance with program revisions as needed. Frequently, consultants observed the youths participating in their daily activity schedules; such observation permitted the consultants to obtain interobserver agreement with teaching parents on the child behaviors being measured, and also set the occasion for them to provide specific feedback on teaching parents' instruction and treatment skills. Other consultation tasks included assisting couples in problem solving relevant to the supervision and training of associate therapists, helping them acquire parent-training skills, and offering guidance about the development of good consumer relationships and the fulfillment of home management responsibilities.

Over a relatively brief period of time, it would not be unusual for a couple and their consultant to interact about a very broad range of issues, such as the appearance of the lawn; the care of a youth's clothing; the couple's recent contacts with teachers and neighbors; plans for securing a new dishwasher; teaching parents' interactions with one another in the presence of associate therapists; conventions to be used in graphing children's performance data; advocacy activities on behalf of a youth's natural parents; preparation of next month's work schedule; teaching parents' satisfaction with their private living quarters; how to get a haircut for a physically aggressive youth; and what to do about a child's bedwetting. It is perhaps not surprising, then, that teaching-parent couples received an average of 10 visits per month from their consultants or an average of 28 hours per month of in-home consultation time. Data on in-home consultation also indicated that a consultant whose office was geographically removed from the group home tended to make fewer visits per month, but he or she would stay for longer periods of time, whereas a consultant who was headquartered near the home typically made more visits that were of shorter duration. In addition to in-home consultation, couples also received telephone consultation (29 calls per month, or 5 hours of phone consultation per month, on the average). This significant amount of telephone time reflects the fact that consultants were available to teaching parents on a 24-hour-per day basis, and they provided crisis intervention as well as ongoing teaching. Thus,

it was the consultant who was called when a youth suddenly began to exhibit operant vomiting, when an associate therapist resigned unexpectedly, or when a child refused to remain in bed at night.

Because living with five autistic youths can produce multiple stresses, one of the most important functions of the consultation process has been the provision of a support system for teaching parents. To this end, consultants frequently participated in social activities with teaching parents; helped to assure that their accomplishments were adequately recognized; assisted in securing needed supplies and equipment; helped to interpret couples' concerns to administrators and board members; and maintained strong positions of advocacy for couples. The existence of this support system appears to be related strongly to teaching parents' job satisfaction and employment longevity as well as to program quality.

1.5. Evaluation

During their first year as teaching parents, couples prepared for two comprehensive evaluations—a major evaluation that occurred at approximately 6 months and a professional evaluation occurring at approximately 12 months. Because these two evaluations are procedurally identical, the feedback that a couple received following their major evaluation could assist them in preparing for their professional evaluation, and by achieving criteria on the latter, they earn certification by the National Teaching-Family Association.

Evaluation activities included a review of all teaching and treatment programs provided for the youths in the home; an in-home visit by an evaluation team that assessed the appearance of the home, the couple's intervention skills, and the youths' performance; and a mailed questionnaire that invited consumers of program services to indicate their satisfaction with the teaching parents and the group home.

About a week before the in-home evaluation, children's records were scrutinized by independent reviewers, who examined each child's program and answered the following four questions:

1. Does this program qualify as an individualized program (i.e., does it include a written, objective response definition; a description of the data-collection procedure; a written description of the intervention procedure; and a graph or other type of data summary)?
2. Is this program effective (i.e., do performance data display child behavior change in a desired direction)?
3. Is this program appropriate (i.e., should the program continue or should it be stopped immediately)?

4. Was parental consent obtained (i.e., does the program include a parent signature obtained within the past calendar year, or since the last revision of the teaching or treatment procedure)?

A detailed discussion of this evaluation is available in McClannahan and Krantz (1981).

Such reviews of children's treatment records indicate that, within their first year as teaching parents, couples delivered an average of 35 individualized teaching and treatment programs to the youths in their homes; this represents a mean of seven individualized programs per youth. On the average, 81% of all individualized programs delivered to youths were rated by the evaluators as effective, that is, as producing behavior change in a desired direction. A mean of 94% of all individualized programs were rated as appropriate, and for the small number of programs that were not so designated, evaluators indicated that their concern was not with the nature of the intervention procedures but with pieces of information missing from children's records. An average of 79% of programs included a signed parental consent, a figure that appears especially noteworthy when it is recalled that many of the youths, during their lengthy institutional stays, had lost the ties with their natural families that the teaching parents were working to restore.

On the day of in-home evaluations, evaluators typically arrived late in the afternoon and remained through the dinner hour. As in the original model, evaluators completed a standard checklist relating to the physical appearance of the home (Davis, Warfel, Fixsen, Maloney, & Maloney, 1979). Other in-home measures, however, were specific to the model for autistic youth. For example, observational data on a youth's opportunities to respond were obtained in one-to-one teaching sessions conducted by each teaching parent. Opportunities to respond were scored whenever a teaching parent asked a question or gave an instruction that called for appropriate child behavior (e.g., "Stand up," "What do you want to buy with your tokens?", "Tell our visitors your name," or "Please tuck in your shirt"). Frequency data were collected for a 5-minute period, beginning after the evaluators had been present in the teaching session for 5 minutes. The data indicated that, during 5-minute observation periods, teaching parents provided children with a mean of 22 opportunities to respond.¹ Because autistic children typically need many opportunities to practice new skills, these data appeared to document an important dimension of ongoing teaching.

¹Additional information about these and other assessment procedures may be obtained from the authors.

Evaluators also collected data on the frequency of behavior-specific praise statements delivered by the teaching parents during group activities. Behavior-specific praise statements were identified as communications that included both an indication of approval and an indication of what behavior was being praised or approved (e.g., "Good pointing," or "It's wonderful that you're looking at me"). A 5-minute sample of praise statements was obtained during the first group activity conducted by each teaching parent; during the 5-minute periods sampled, teaching parents provided an average of 14 behavior-specific praise statements to the youths. These high levels of praise for the youths' appropriate performances not only facilitated their acquisition of new skills, but also contributed to the atmosphere of warmth and affection that characterized the homes.

During in-home evaluations, measures of children's "on-task behavior" or engagement were also obtained. On-task data were collected during times when children were scheduled to do two or more different activities in adjacent areas of the home (e.g., folding laundry in the TV room and setting the table in the dining room). Children were defined as on-task if they were in the assigned area and (1) scrutinizing, manipulating, or otherwise appropriately using instructional or play materials; (2) visually attending to the teaching parent or to the materials he or she was presenting; (3) visually attending to another youth who was interacting with a teaching parent; or (4) responding to the teaching parent's directions. Using a procedure of time sampling at a point in time (every minute, on the minute mark), evaluators made 10 consecutive sweeps of the child-occupied areas of the home, recording the number of youths present and the number of youths who were engaged or were on-task. Children's levels of engagement ranged from 90% to 98%, with a mean of 94%. For many autistic youths, highly structured, planned activities are important in helping them to learn to control severe behavior problems. Observations of children's on-task behaviors documented that the youngsters in teaching-family homes had high levels of engagement with provided activities and materials.

In-home evaluators also independently completed behavioral checklists related to the teaching parents' abilities to teach new skills, to use children's special motivational systems, and to correctly implement behavior-reduction procedures such as Differential Reinforcement of Other Behavior (DRO) schedules and contingent ignoring. Additional checklists assessed equality of care (e.g., "Do mealtime seating arrangements offer all youth approximately equal opportunities to interact with adults?"; "Does everyone sit at the same table during dinner?") as well as the teaching parents' skills in providing rationales for specific program dimensions (e.g., "Why are you collecting all these data?"; "What

would you do if a youth's parents refused to give consent for an individualized program?"). The data obtained during these evaluations verified that teaching parents were able to demonstrate specific teaching and treatment skills and that children were benefiting from the group home programs.

A final component of both major and professional evaluations was a survey of consumers' satisfaction with the teaching parents and the group home programs. Consumer evaluation has been an important component of the original model (Davis, Warfel, Maloney, Maloney, & Fixsen, 1979) and has been equally valuable in extending the model to autistic youth. Thus, 4 to 6 weeks prior to the in-home visit, mailed questionnaires were sent to parents, teachers, neighbors of the group home, social agency representatives, and administrators and board members. These individuals were invited to rate their satisfaction on a 7-point, Likert-type scale, and teaching parents who received mean ratings of 6 or better on each scale item were considered to have met the criteria. The data resulting from consumer evaluations, in-home visits, and reviews of children's records were subsequently compiled and provided to teaching parents, who had opportunities to discuss these evaluations with their evaluators. Consultants and teaching parents worked together in determining how best to make use of this detailed feedback in correcting problems and improving services to the youths.

Virtually continuous teaching, provided to youths on a daily basis, has resulted in many important behavior changes. But because teaching parents are busy people, it has been impossible for them to collect observational data on the development of each new skill, and they have frequently been heard to say, "We wish we had taken data on..." Thus, semiannual videotaped probes of child performance have been used to document the many social, verbal, and self-care skills acquired by the youths.

Videotaping occurred at the time each youth entered the group home and at regular 6-month intervals thereafter. Each videotaped probe consisted of a series of standard, scripted scenes related to greeting skills, direction following, social conversation, and self-care skills. During taping, children did not receive verbal, gestural, or physical prompts from the teaching parents.

The greeting scene offered each youth opportunities to make five correct responses, such as opening the door within 5 seconds of being asked to do so and providing an unprompted nonverbal or verbal greeting (waving or saying "Hi" or "Come in"). Figure 1 displays the greeting skills of 10 autistic youths. Children 1 through 7 were taped at program entry and at months 6 and 12; children 8 through 10 had been taped at admission

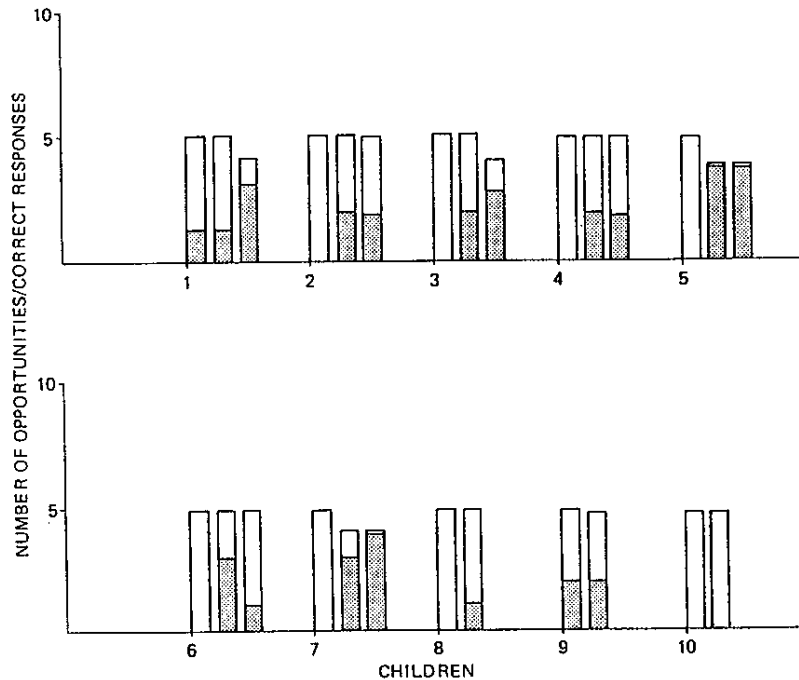


Figure 1. Number of opportunities (unshaded bar) and number of correct responses (shaded bar) in a greeting-skills activity provided for 10 autistic youths during semiannual videotaped performance probes.

and at 6 months, but 12-month tapes had not yet been made. The data indicate that 7 of the 10 youths displayed acquisition of greeting skills.

In the direction-following scene, teaching parent and child sat in straight chairs, facing one another. The teaching parent gave each direction and then waited, either until the direction had been followed or until 10 seconds elapsed, before proceeding to the next direction. Four directions were given: "Look at me," "stand up," "sit down," and "put your hands down." Figure 2 shows 10 children's direction-following skills at the time of the semiannual videotaped probes; 6 children displayed increased skill in following teaching parents' directions.

Teaching parent and child were seated near one another in comfortable chairs in the living room or family room for taping of the social conversation scene. The teaching parent provided 10 opportunities for the child's verbal behavior, responding briefly if the child answered a question, or waiting for 10 seconds if the child did not answer. The teach-

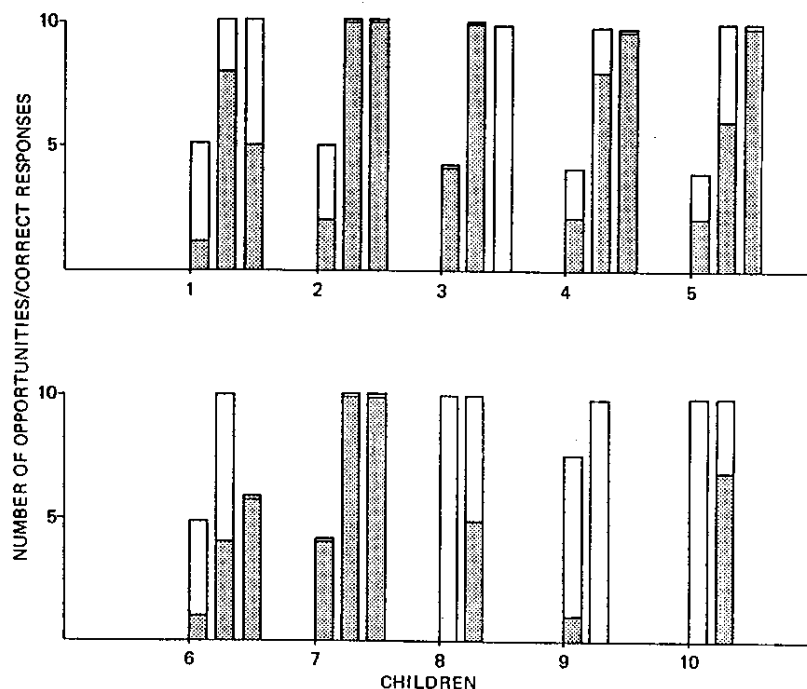


Figure 2. Number of opportunities (unshaded bar) and number of correct responses (shaded bar) in a direction-following activity provided for 10 autistic youths during semiannual videotaped performance probes.

ing-parent's script for this scene included questions such as "How are you?"; "What did you do today?"; and "What day is it?" Children's videotaped answers were scored as correct if they occurred within 5 seconds and were unprompted. Six children who displayed no social conversation at the time of the intake probe had begun to exhibit social conversation skills after 6 to 12 months of group home treatment (see Figure 3). Experience suggests that some variability on these probes would ultimately become part of an ascending trend that would appear on subsequent probes.

Self-care skills were probed in two activities—toothbrushing and hairbrushing. In each of these scenes, a teaching parent gave a child the necessary materials (toothbrush and toothpaste or hairbrush) and delivered a single instruction, "Brush your teeth," or "Brush your hair," after which videotaping continued for 1 minute. Toothbrushing behaviors, for example, were scored as correct if the youth removed the toothpaste lid,

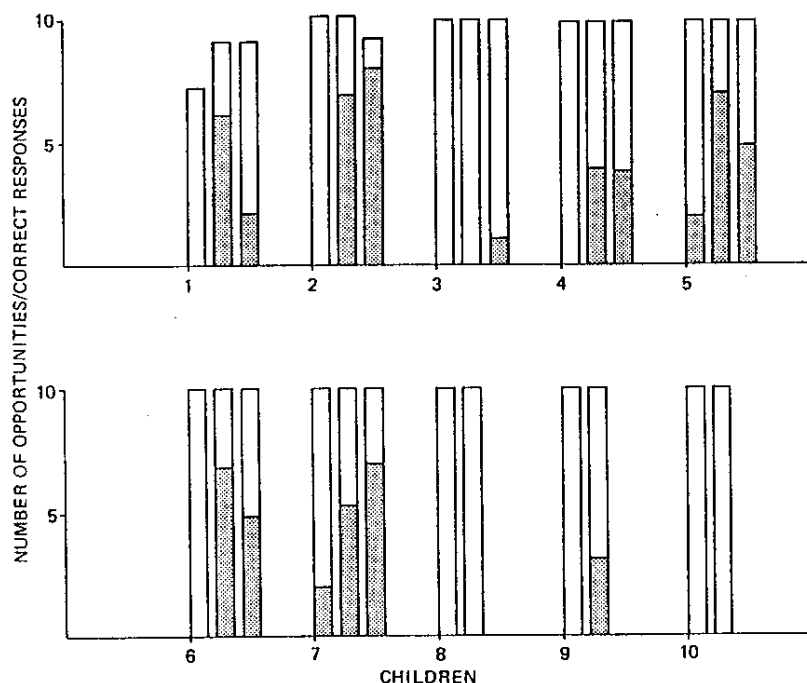


Figure 3. Number of opportunities (unshaded bar) and number of correct responses (shaded bar) in a social conversation activity provided for 10 autistic youths during semiannual videotaped performance probes.

put toothpaste on the brush, put the toothbrush in his or her mouth, brushed for 10 seconds, and did not use toothbrush or toothpaste inappropriately. As shown in Figure 4, 9 of 10 children acquired improved self-care skills after entering the group homes; indeed, at the time of the last probes, 6 children were correctly completing all the responses that were scored.

These semiannual videotaped probes of child performances obtained by consultants, provided useful data on program effectiveness without generating additional response cost for teaching parents. And, although teaching parents and their associate therapists often find it difficult to obtain measures of interobserver agreement because of the importance of continuous supervision and teaching, videotaped probes offer opportunities to assess the reliability of behavioral measurement procedures objectively, without unduly imposing upon the children's scheduled learning activities.

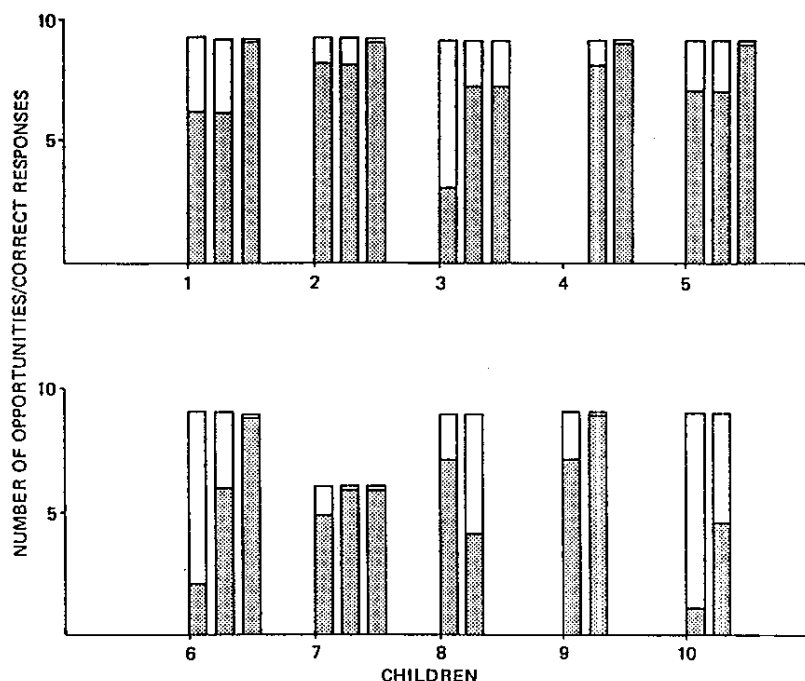


Figure 4. Number of opportunities (unshaded bar) and number of correct responses (shaded bar) in self-care activities (toothbrushing and hairbrushing) provided for 10 autistic youths during semiannual videotaped performance probes.

2. Discussion and Summary

Extension of the model to autistic children began in 1977 with the development of Family Focus, the first teaching-family home for autistic youth. Over a period of several years, this home not only provided high-quality treatment services to youth, but also served as a natural laboratory that supported the refinement and documentation of a variety of intervention components. Subsequently, Family Focus provided a demonstration that the Teaching-Family Model for Autistic Youth was capable of producing socially important, standardized, and replicable effects (Paine & Bellamy, 1982). Professional evaluators endorsed the effectiveness and appropriateness of in-home teaching and treatment activities, and consumers provided social validation of the program (Braukmann *et al.*, 1975). Representatives of the original model, through ongoing observation of the program and participation in teaching-parent certification,

verified that this extension of the technology to autistic youth had occurred within the parameters of the Teaching-Family Model and was properly considered a part of the model. Ultimately, training manuals, workshop training packages, in-home program software, and consultation and evaluation sequences were developed and tested, and the program was successfully disseminated.

Outcome evaluation of programs for autistic youths must employ somewhat different measurement systems than outcome evaluations for delinquent or other less developmentally disabled youth populations (cf. Kirigin *et al.*, 1979). Follow-up of autistic youngsters must continue over many years before any of the youths acquire sufficient community-living skills to leave the program; indeed, a significant proportion of the youths will unquestionably require continued supervision and treatment throughout their lives. In the future, it will be important for outcome evaluation to include measures of the restrictiveness of youth placements. In the case of autistic youths, such measurement procedures are likely to be more sensitive than measures of posttreatment success.

The cost of teaching and treatment services provided to autistic youth in teaching-family homes continues to compare extremely favorably with services provided in institutional environments. Presently, youth intervention at Family Focus costs \$27,115 per child per year, at a time when institutional programs for autistic children in the same geographic region range from \$31,000 to \$80,000 per child per year.

An additional benefit of the model is its efficiency in helping novice teaching parents become skilled professionals. Although preservice and inservice workshops do not typically enable participants to achieve criteria performances, they do result in respectable skill increments that permit teaching parents to receive extremely difficult-to-treat autistic youngsters into their homes, and that enhance their receptiveness to continued training or consultation. And the consultation services delivered to teaching parents during their first year contribute to their achievement of performances that are endorsed by both consumers and professional evaluators. Thus, the development of training and consultation strategies has yielded greater time efficiency and has contributed to an economy of effort in developing new programs and in training new personnel.

Although many procedural evaluations have been conducted, other components of the model for autistic children have been put to "accidental" tests (e.g., the child-staff ratio of the group home has been tested in this way on occasions when an associate therapist resigned or when a teaching parent became ill), and still other aspects of the model are supported by experience and anecdotal evidence. An example of this latter category is the importance of administrative support systems for teach-

ing parents. Willner, Braukmann, Kirigin, and Wolf (1977, p. 266) have noted that:

The role of the teaching parent in the delivery of child care services seldom receives the attention and recognition that it deserves. There are few, for example, who appreciate the enormity and complexity of their daily professional responsibilities, or the tremendous physical and emotional energy required in the constant daily (i.e., 24 hours per day) challenge of providing for the needs of their youth. The pace is exhausting, and the demands to respond to diverse problem situations in the home, at school, in the community, in the natural home, on weekends, at night—is [sic] constant and probably unequalled in any other profession.

This being the case, administrative support services seem critical to program quality. Such services may take a variety of forms, such as providing bookkeeping and secretarial services to the couple; assisting with the purchase of office supplies; arranging for youth transportation to and from school; or securing a level of funding for the home that permits assistance with housekeeping or lawn maintenance, or that assures that a new dishwasher or lawnmower can be purchased when needed. Other types of administrative support may include helping to arrange for the couple to attend conferences, make professional presentations, enroll in college courses, or participate in research or training activities. Underlying all such support services, of course, must be the assurance that program administration will be consistently nonpunitive and responsive to teaching-parents' concerns, and dependable in its efforts to acknowledge publically and display their accomplishments on behalf of autistic youths.

Potential consumers of the model for autistic youth have frequently raised questions about teaching-parent longevity; such questions are certainly justified, given the level of effort that is required each time a couple leaves a home. It is hypothesized, however, that a strong administrative support system is as powerful as any other set of variables in determining teaching-parent longevity. At the prototype home, teaching parents' average length of stay is presently 26 months (2.2 years).

In summary, after more than 5 years, we are more than ever persuaded of the importance of behavioral models in developing effective and least-restrictive service delivery systems. The Teaching-Family Model for delinquent and predelinquent youth offered a comprehensive system for preserving youths' rights and for teaching youths to participate in rights protection activities (e.g., youth consumer evaluation, family conference). This important feature of the original model has been invaluable in guiding the development of analogous program components for autistic youths. Thus, workshops provide substantive information on youth rights, consultants regularly observe teaching-parent-child

interactions and review children's programs and progress, and professional evaluators examine all individualized programs and assess teaching parents' intervention skills. A well-developed consumer evaluation technology secures community members' input on program operation, and videotaped probes of child performance help to assure that children's rights to effective treatment are preserved. Of course, these program dimensions derive their importance from the way in which they affect the daily lives of autistic youths. They matter because, quite frequently, visitors to a teaching-family home are met by an autistic youth who opens the front door, makes eye contact, extends his hand, and says, "Welcome to our home."

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