THE ELIZABETH M. BOGGS CENTER
ON DEVELOPMENTAL DISABILITIES
Department of Pediatrics

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MEDICAL SCHOOL
University of Medicine & Dentistry of New Jersey

*A University Center for Excellence
in Developmental Disabilities Education, Research, and Service*

Enhancing Early Intervention for Parents of Young Children with Autism Spectrum Disorders:

Information, Strategies, & Resources

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Enhancing Early Intervention for Parents of Young Children with Autism Spectrum Disorders

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*It is not until we find ourselves in the
position of caregiver, that we understand
the demands upon our skills, personalities,
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Introduction

Parenting is perhaps the most important and challenging task we may
assume as human beings. Initially, most of us are prepared for the job,
for better or worse, by what we learned from our parents. Our experience,
in this case, was from the perspective of a child receiving care and
support. It is not until we find ourselves in the position of caregiver, that
we understand the demands upon our skills, personalities, stamina, and
ultimately our hearts.

Raising a child with a disability, particularly a confounding disorder like
autism, challenges parents in extraordinary ways. The need for information,
a variety of unexpected skills, and support, is immediate and urgent. In
our experience, parents quickly find themselves in the role of researcher,
teacher, advocate, collaborator, and innovator. The goal of this workbook
is to reduce the demands of the first two of these roles.

The gap between research-based knowledge and the needs of families
raising a child with a disability has long been acknowledged. In recent
years a wealth of information has been generated by researchers in the
field of autism and special education. We approached this product with
the belief that researchers can help by translating existing knowledge and
thereby making scientifically valid information useful to families in real
life situations.

This workbook was created with a sincere appreciation for the challenges
and needs of parents raising young children with autism. It is offered in
the spirit of collaboration that is essential for the successful partnership
between families and professionals.

Purpose

The purpose of this workbook is to provide a teaching tool for parents and professionals engaged in the important work of training the caregivers of young children with autism. It is intended that the workbook be used as a curriculum for parent training and coaching. Initial training may be conducted in a small workshop setting. Ideally, training will be followed by the coaching of new skills in natural settings, family homes, and community settings. Professionals may serve as consultants and coaches in the process of learning new skills. Once parents feel confident and comfortable with new ways of supporting the child, the professionals can go away and allow family life to continue its natural course.

The information and methods provided in this workbook are supported by scientific research. In developing these materials, we sought to identify the most important types of knowledge and skills caregivers would need, and to provide useful information and strategies that are accessible, efficient, and effective.

The Autism Spectrum Disorders

When parents receive a diagnosis of autism for their child, they begin a process of educating themselves about the autism spectrum disorders (ASD), also referred to as pervasive developmental disorders. This section is intended to provide an overview of these disorders with a focus on the ways that ASD influences thinking, feeling, learning, and behavior. The primary message is that these disorders truly represent a spectrum characterized by varying degrees of impairment in communication skills, social interactions, restricted interests, and repetitive behaviors.

An accurate diagnosis, while important, only tells us so much. Children with autism have some behaviors in common, but like other children, they are all unique individuals. The critical task for parents is to understand how autism affects their child's thinking, feeling, learning, and behavior. This knowledge will help you to effectively support his development as your child moves from early childhood to the elementary school years, adolescence, and into early adulthood. You will need to become an expert on your child, an effective advocate for him, and develop good working relationships with a network of people who will collaborate with you.

Early recognition of symptoms is essential so that you can begin the process of identifying and accessing appropriate services and supports. The National Institutes of Health (2004) identify the following early signs of autism in children:

❍ Does not babble, point, or make meaningful gestures by 1 year of age
❍ Does not speak one word by 16 months

An accurate diagnosis, while important, only tells us so much. The critical task for parents is to understand how autism affects their child's thinking, feeling, learning and behavior.

As children age, and the social, academic, and community environments become more complex and demanding, the ways that autism influences their world also changes.

❍ Does not combine two words by 2 years
❍ Does not respond to name
❍ Loses language or social skills
❍ Poor eye contact
❍ Doesn't seem to know how to play with others
❍ Excessively lines up toys or other objects
❍ Is attached to one particular toy or object
❍ Doesn't smile
❍ At times seems to be hearing impaired

This list is not intended to be exhaustive, but represents some of the early signs that may concern parents and indicate the need for professional evaluation. As children age, and the social, academic, and community environments become more complex and demanding, the ways that autism influences their world also changes. Understanding the requirements of these environments and your child's strengths and deficits will help you to help him be successful, healthy, and happy.

The autism spectrum disorders range from severe forms of autism with multiple impairments, to milder forms, such as Asperger's Syndrome, and a diagnosis referred to as pervasive developmental disorder not otherwise specified (PDD-NOS) in which some, but not all symptoms of autism are present. For an in-depth description of the diagnostic criterion for the pervasive developmental disorders, you may refer to the *Diagnostic and Statistics Manual IV (DSM IV),* which is published by the American Psychological Association. Parent-friendly explanations of these diagnostic criterion may be found at the recommended websites cited in this workbook.

The types of services and supports that will benefit your child vary according to the type or degree of autism that affects your child. Professionals agree that early intervention is important. You will want to learn as much as you can about available treatments, services, and supports. You will want to base your decisions about what is best for your child upon your knowledge of her unique strengths, interests, and preferences; your family's values and needs; and the type of outcomes you would like to see in the short and long term. We recommend that you envision a lifestyle for your child that is similar to other children and youth of her age. The past few decades have taught us that with the right types of support, children with autism are capable of achieving good outcomes educationally, socially, and vocationally.

We recommend the following questions when parents are planning for their child:

- ❍ How successful has the program been for other children?
- ❍ Do the professionals or staff have adequate training in working with children and youth with autism?
- ❍ Are the approaches to be used validated by scientific research?
- ❍ Are the assessment and treatment procedures specified?
- ❍ How will effectiveness and progress be measured?
- ❍ How will the program affect my child and family?
- ❍ How will the procedures be integrated into my child's current life at home, school, and community?
- ❍ Will my child be exposed to activities that are meaningful and motivating?
- ❍ How are activities planned and organized?
- ❍ What is the cost, location, and time commitment involved?

(Adapted from the Autism Society of America and National Institutes of Health, 2004)

Autism and the Social World

Perhaps the most important characteristic the autism spectrum disorders share is their influence on the social world of people with autism and those around them. Regardless of the severity of a child's disability, problems with social interaction are typically seen. Autism was first recognized by Leo Kanner in the 1940s. He described the social features of autism in the following words, "these children come into the world with an innate inability to form the usual biologically provided affective contact with people, just as other children come into the world with physical or intellectual handicaps." Kanner's language is very medical and his tone may be negative, but he recognized the essential social nature of the autism spectrum disorders. At about the same time, an Austrian physician, Hans Asperger, identified a group of children who shared a common set of characteristics including physical appearance and expressive characteristics, intelligence, social behaviors, motivation, and emotion (Smith-Myles & Southwick, 2005).

Since Kanner and Asperger's early observations, parents and professionals have documented the many and varied ways that these disorders interfere with the development of typical patterns of social interaction. The good news is that we are now able to recognize both social skills and other impairments in ways that enable us to intervene effectively, and improve

Notes:

Early identification and intervention enable children with ASD to develop in more typical ways and to participate more effectively in family, school, and community.

the ability of people with autism to negotiate the social world. Early identification and intervention enable children with ASD to develop in more typical ways and to participate more effectively in family, school, and community.

Children with ASD often have difficulty with reciprocal social interaction. This means that they may not respond in typical ways to the many activities that parents and children share in everyday living. Young children may avoid eye contact and physical touch, and seem unresponsive to verbal communication. They may seem indifferent to people and prefer to be alone. Children may not respond to affection and seem emotionally unattached. These social symptoms can be very difficult for parents to understand and accept. Parent and family counseling may be helpful to both understand and adjust to a child's social behavior.

An important thing for parents to consider is that these social symptoms of ASD are features of the child's neurological disability. If we understand why this is, we can think of ways to teach more appropriate social behaviors. Children with ASD appear to have difficulty understanding what typical social behaviors mean, and how to respond to them. They may not be able to interpret facial expressions, gestures, and body language. This is often combined with problems with receptive and expressive verbal communication. When you consider how difficult social interaction may be for children with ASD, it is no wonder many withdraw from interaction and/or respond with inappropriate behavior.

For Example

Some children with autism have difficulty regulating their emotions and the behaviors that accompany their feelings. Because they may not understand why other people do what they do, they may respond inappropriately to others' behavior. For example, Michael was a three year old with autism who often mimiced the emotions of others. When he observed another child crying, he would cry. Unfortunately for his parents, he had become very skilled at crying and would cry longer and louder than the child he had observed. Initially, his parents tried to soothe him, thinking that he was upset by the other child's behavior. Michael found this attention very rewarding and so cried often and loudly. Once his parents understood he was not in distress, they used other responses such as distraction and ignoring. Gradually the crying decreased.

Terry provides another example of the difficulty some children with autism have understanding the behavior of others. In her pre-school class, Terry is exposed to the toys and games that other children play. Because she has difficulty understanding the rules of games, she often plays by herself. One day, two other children were playing catch with a ball. One of the

children missed the ball and it hit Terry. In response Terry screamed and began biting herself. Once calm, she told her teacher that "they were trying to kill me." Terry's choice of words was very dramatic and clearly demonstrated her problems with understanding the behavior and intentions of others. You may notice that typically developing children display similar behaviors. The difference in Terry's case, is that she may not learn as other children do to understand the difference between an accidental event and a purposeful assault. She may need frequent and repetitive training to learn to respond appropriately to this type of social event. Even with social skills instruction, she may become upset in similar situations. If that happens, she may need to learn to practice ways of calming herself.

Sensory Problems

A neurological feature of autism is difficulty with sensory stimuli. This may include problems with processing information from one or more of the senses. It may be difficult for children to learn from what they see, hear, or feel. In other cases, they may have a higher or lower sensitivity to sound, light, taste, or touch. Through observation and data collection, parents can come to understand their child's particular sensory problems. A thorough neurological examination is helpful in understanding the basis of these problems. When this information is combined, parents and professionals can develop strategies to help young children adapt to confusing or otherwise problematic sensory stimuli.

Rob is a four year old whose parents want to read to him at bedtime. They believe that it will help him develop his language and literacy skills. They also enjoy the activity. They had become frustrated because after a few minutes of reading Rob appeared to become upset and pushed them away. They wondered if maybe he was over-stimulated by the length of time he was asked to pay attention, or by other sources of stimulation like light and sound. They decided to start with very short readings (5 minutes) and gradually increase the length of reading time. They also paid attention to other sensory stimulation like noise (the TV in the living room) and light (they turned off the bedroom light and replaced this with a small book-light). These changes gradually led to improvements in the bedtime reading routine.

For Example

Understanding a child's intellectual strengths and weaknesses empowers parents and professionals to develop appropriate educational programs and instructional approaches.

Intellectual Disability

Intellectual disability (formerly referred to as mental retardation) is seen in many children with autism. Other children with autism, when tested may have normal or above average cognitive functioning in some areas, and below average functioning in others. Psychological testing is recommended for children with autism even if cognitive problems do not appear to be present. Understanding a child's intellectual strengths and weaknesses empowers parents and professionals to develop appropriate educational programs and instructional approaches.

The Importance of Routines

If we examine our own daily patterns of living, we can see that over time we develop fairly consistent routines. We find that we learn to do things in certain ways because we prefer to, we have to, or because certain routines just work better for us. People generally like to be able to predict what is going to happen during the day, and learn new skills to adjust to changes in their daily routines (at home, in school, on the job). The features of autism that we have described – social, communication, sensory, and cognitive impairments – interfere with learning new skills and adjusting to the changes typical in daily life. For this reason, many children with autism learn to perform certain routines in the same way each time, and often avoid changes to these routines or new experiences they may be exposed to.

If we appreciate the importance and structure of a child's daily routines, we can provide instruction, adaptations, and accommodations that enable children to respond more flexibly and effectively to the demands of a constantly changing world.

For Example

Perry is a three year old who attends a daycare program while his parents work during the day. Depending on their schedules, some days Mom picks him up, and some days Dad picks him up. His parents consulted a psychologist because Perry had begun to display temper tantrums at home. The psychologist conducted a functional assessment of Perry's behavior in order to identify and better understand the function (meaning, reason) of Perry's tantrums. A functional assessment typically includes an evaluation of a person's daily schedule, or routines. This enables parents and professionals to understand the relationship between a child's problem behaviors and events that occur during the day.

The psychologist learned that Perry often displayed tantrums during the car ride home from day care. By interviewing Perry's parents, the psychologist learned that sometimes they would stop at the park on the way home. He also learned that tantrums were more likely to occur on afternoons when they did not have time to stop at the park. He guessed that Perry's understanding of the after school routine included a visit to the park, and tantrums were an expression of his unhappiness with changes to his routine.

The psychologist helped Perry's parents develop a visual system (picture schedule) to begin to teach Perry what his daily routines would look like. On some afternoons his schedule included the park, on other days it reflected changes, like stopping at the grocery store. It took a while, but gradually Perry learned the meaning of the schedule and to anticipate changes in his daily routine. As he learned to anticipate changes in his daily routines, his tantrums decreased.

In Conclusion

To effectively raise a young child with autism, parents must learn how this neurological disorder affects thinking, feeling, learning, and behavior. The various sections of this manual will introduce you to some methods and tools you can use to help your child be more successful and happy. The skills that will help you support your child's development include research, networking, and advocacy. The websites and printed materials in this workbook provide information that should help you get started, or build upon the knowledge and skills you have.

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Notes:

Understanding Problem Behavior:

A Parent's Guide to Functional Assessment and Intervention for Children with Autism

Most children display some types of problem behavior as they move through their development. These behavior problems can be thought of as a necessary (though frustrating) part of the developmental tasks that children must master. They can also be seen as linked to brain development and the staggering amount of learning that takes place in early childhood.

Family life is often very busy. Parents are balancing the competing demands of wage earning with family life, as well as the difficulty of coordinating the education, health care, and social lives of their children. In addition to this, there is a need for parents to maintain their own health, personal growth, and relationships.

Children with autism spectrum disorders (ASD) often display problem behaviors that interfere with their ability to learn and may significantly disrupt family life. The demands upon families are often excessive and influence how families construct and organize their daily lives. In this section of the workbook, we will focus on developing an approach to understanding problem behavior in the context of typical family routines. It is in these typical family rituals of mealtimes, recreation, bedtime, and community activities that problem behaviors emerge. It is also in the context of these routines that problem behaviors can be understood.

There is a considerable amount of research literature that indicates that parents can learn to be effective behavioral interventionists for their children with autism. The goal of this chapter is to provide some introductory information that will help you understand your child's

Behavior problems can be thought of as a necessary (though frustrating) part of the developmental tasks that children must master. They can also be seen as linked to brain development and the staggering amount of learning that takes place in early childhood.

behavior, and to provide some helpful methods and tools that will enable you to teach functional behaviors that will replace problems with skills. The basis of this approach is the belief that problem behaviors are problems of learning.

When your child displays problem behaviors, we suggest that it may be because:

- ○ She doesn't understand what is expected of her
- ○ She doesn't know how to perform the skill well
- ○ Something in the environment is interfering with her ability to perform the skill well
- ○ Something about how she is requested or directed to do the task is not working
- ○ A feeling (anxiety) or internal experience (pain) may be interfering
- ○ The task is not rewarding
- ○ She wants to do something else that is more rewarding

This list of possible explanations for your child's problem behavior is not meant to be exhaustive. The big idea is that problem behaviors are your child's way to meet unmet needs. They serve a function for him. Those functions may include:

- ○ Getting an item (food) or activity (watch TV)
- ○ Getting attention (help from parent, physical proximity)
- ○ Escaping an unpleasant activity (bedtime, bath)
- ○ Expressing a feeling (I'm scared) or saying no
- ○ Self-stimulation or fun
- ○ Self regulation: behaviors such as rocking or hand flapping may be ways to manage unpleasant feelings such as over-stimulation or anxiety

Definitions

The first concept you will need to understand is called functional behavioral assessment. This is simply a process of understanding the relationship between events in your child's environment and the occurrence of problem behaviors. If we use the process of functional behavioral assessment we can understand:

- ○ Why problems happen
- ○ How we can change our behavior to prevent them
- ○ How we can change environments and routines to prevent them
- ○ What skills we can teach the child to replace the problem behaviors
- ○ How we can use effective consequences to decrease problem behaviors and promote functional replacement behaviors

We will introduce some key concepts that will help you to begin thinking about the functional assessment of problem behaviors, and will then provide examples of tools that will assist you to identify them within the places and routines in which problems occur.

The first important concept is something called setting events. You can think of setting events as things that set the child up for problem behavior. Here is an example:

Renee is a four year old girl with autism. One of the ways her autism affects her is that it is hard for her to learn routines, e.g. how to get dressed before going to school in the morning. Once she has learned a routine a certain way, she needs it to happen the same way, every time. Renee's mother is her primary caregiver. She has taught Renee to follow the steps of getting dressed in a certain way. This morning, Renee's mother is not feeling well, so her father wakes her and begins to assist her in getting dressed for school. Renee physically resists the routine, begins crying, and then bites herself.

Renee's father feels frustrated by this experience. His day, and his daughter's day, both start off on a sour note. By understanding a basic process of functional assessment, he can come to an understanding of why the routine went so poorly, change aspects of his behavior, and teach Renee some new skills. These strategies, informed by an understanding of the child's behavior in the context of the routine, can lead to positive change.

Renee's need for sameness (a characteristic many children with autism possess) acts as a setting event. When her father appears at her bedside (different person) and starts the routine in a different way (uses different words, directions), the stage is set for Renee to display problem behaviors.

Another important thing to understand about Renee's behavior in this situation is the antecedent events, or things that happen immediately before the problem behaviors occur. In the case of Renee, her father appearing at her bedside in the morning may not be problematic, but, when he requests she start her morning routine, his request triggers her problem behaviors. Renee may not understand what is expected of her, and in the context of the unexpected change, she may be anxious or overwhelmed.

As we consider Renee's problem behavior (resisting, crying, and biting), we need to think about what skills she needs in this situation to be

Definitions

For Example

Definitions

successful. Does she need information to understand what is expected, or words to express her needs, preferences, or to make choices?

Finally we want to think about the consequences of Renee's behavior, or the things that immediately follow her problem behaviors. In this case, her father may temporarily stop the routine, and provide her with soothing or calming attention. He may even leave the room and get Mom's assistance. In this case, the consequences of Renee's behavior may be that she escapes the demands of the routine, gets assistance to calm herself, or gets Mom's assistance. In any case, the response her father makes to her behavior influences whether she may repeat this behavior in the future.

The components of problem behavior, considered within a problematic routine, can be viewed as a dynamic set of parent child interactions. The nature and quality of these interactions can be understood when we apply a fairly simple model for analysis. The four component model for analyzing problem behavior looks something like this:

Four component model for analyzing problem behavior

Setting Events	Antecedents or triggers	Problem behaviors	Maintaining consequences
Individual child characteristics (needs, preferences, learning history) Impact of disability (need for sameness, inability to read social cues, anxiety, problems with processing sensory stimuli) Communication and social skills Quality of the environment (too noisy, distractions, crowds, etc.)	Requests to perform non-preferred or difficult tasks Changes in familiar routines Lack of attention or structure The presence of a fear-inducing stimuli, e.g., person, animal, noise, etc. The presence of a desired object or activity Interruption of preferred activities	Have a negative consequence for the child and/or those around her. Function to meet child's needs: To obtain things, avoidance, expression, stimulation, self- regulation. Must be replaced with adaptive skills that replace the problem behavior May require changes in parent behavior and environment	Immediately follow problem behavior and increase the likelihood it will occur again Must be changed or removed before lasting changes in behavior are seen Can be negative or positive in quality Increased rewards may be necessary at first to get behavior change

Conducting a Functional Assessment of Problem Behaviors

Functional assessment is a process for determining the relationship between events in the child's environment and the occurrence of problem behavior. When problem behaviors are re-occurring, and our efforts to address them are unsuccessful, we need to take a time out, and apply the functional assessment process to improve our understanding of what is happening, why it is happening, and what we should do to assist the child to be successful in problem routines. Sometimes, it may be useful to get the services of a professional with training and experience in functional assessment. Whether you conduct the assessment yourself, or collaborate with a professional, the functional assessment process has the following steps:

1. Ask some questions that increase our understanding
2. Develop a hypothesis about the nature of the problem
3. Conduct some observations to confirm our hypothesis
4. Makes some changes in routines and see how this influences the child's behavior
5. Develop some interventions that address each of the four components of the problem
6. Evaluate the interventions, and change them as needed

Asking Questions About the Behavior

The first step in conducting a functional assessment of your child's problem behavior is to define the behaviors of concern. What do the behaviors look like? How long have they been a problem? How often do they occur? How intense are they? Do some behaviors occur together or in a sequence? If your child displays more than one problem behavior, these questions may help you to prioritize what behaviors to work on first.

Consider possible setting events. Here is a list of possible setting events that may influence your child's behavior:

- ○ Medication or medication changes
- ○ Illness or pain
- ○ Sleep patterns
- ○ Diet or hunger
- ○ Level of exercise

Definitions

Sometimes, it may be useful to get the services of a professional with training and experience in functional assessment.

- Changes in routine
- Physical setting
- Relationships with others
- Negative events
- Communication problems
- Sensory issues

As you look at this list of some possible setting events, you may have unanswered questions. If your child is taking a medication, what are both the intended and unintended side-effects of the medication? Are there possible medical conditions that have not been diagnosed and require treatment? Have there been significant changes in his world? Remember to think about these changes from your child's perspective. Small things may have a big impact in his world. Does your child have a functional way of communicating? Does the way you and others communicate with him appear to be effective? If you are using verbal communication and it doesn't appear to be effective (the child does not respond), should you consider visual methods?

Consider possible antecedents: Remember that antecedents are events that happen immediately before the problem behavior occurs. These may include the following:

- Requests or directions to do things that a child doesn't like and/or finds difficult
- Interrupting activities the child enjoys
- New situations or people
- Exposure to things that make the child fearful or anxious
- Loud noises, painful tactile sensations, or other types of difficult sensory experiences

When considering antecedents it can be helpful to ask who, what, when, and where questions.

Who:
- Who is around when the behavior occurs?
- Who is around when it doesn't occur?
- How many people are around?
- Is someone coming or leaving?

What:
- What is happening when the behavior occurs?
- What is happening when it doesn't occur?
- Is the child being asked to do something she doesn't like or finds difficult?
- Is the child being asked to wait or take turns?

When:
- When is the behavior likely or unlikely to happen?
- When are transitions difficult?
- Are mealtimes difficult?
- Is going to bed or getting up in the morning difficult?

Where:
- Where is the behavior likely or unlikely to occur?
- Is the behavior more likely to happen at home or school?
- Is the behavior more likely to happen in the community (stores, restaurants, playgrounds, etc.)?

These are just a few examples of questions you can ask. The best way to identify antecedents is to observe the behavior and describe the events that occurred immediately before the problem behavior. We may find that some things consistently seem to trigger problem behavior. We may also find that the child responds to many situations with problem behaviors. In this case we need to look more carefully at the influence of setting events and maintaining consequences.

Consider the function of the behavior: Problem behaviors typically have a function (meet a need) that falls in one of the following categories:
- To get desired items or activities
- To get attention or help
- To avoid/escape demands, activities, people
- To express strong feelings
- To refuse something
- To play or stimulate himself

Consequences: Sometimes the best way to understand the function of a problem behavior is to question what happens immediately following the behavior. Remember that consequences may be positive or negative in quality. A child may scream and throw things to avoid a demand. A parent's response may be to place the child in time out by having him go to his room. This consequence may appear negative to the parent, but may be rewarding to the child because time out is a way of at least temporarily avoiding the demand. A good way to understand the influence of consequences is to observe what happens immediately following the behavior. Then, through repeated observations, we may see that a particular consequence is maintaining the behavior (making it more likely to happen again).

A good way to understand the influence of consequences is to observe what happens immediately following the behavior.

Observing the behavior

We observe behavior to see the patterns that may reveal the relationship between setting events, antecedents, behaviors, and consequences. A simple A-B-C format can be helpful. The case of Max illustrates how you can use the information you have gathered by questioning, combined with your observations, to obtain a better understanding of the function of your child's problem behavior.

For Example

Max is a four year old boy with autism. His parents are concerned because he often displays problem behaviors at mealtimes. These behaviors include refusing to eat, screaming, pounding the table, and leaving the table. As you can imagine, this makes mealtimes very unpleasant. Max's parents used the process of questioning and observation to get a better understanding of why Max does this.

Setting events	Antecedents	Behavior	Consequences
Mealtimes interrupt TV Only likes certain foods Limited choices	Parent demands child turn off TV and eat foods he doesn't like Parents talking to each other and siblings	Refusal to eat Screaming and pounding Leaving the table	Avoids demands Gets parent attention

Developing Behavioral Interventions

Once we have developed an understanding of why problem behaviors are occurring, or what function they serve for the child, we can think of intervention strategies that will likely lead to improvements in your child's behavior. Positive behavioral interventions should address each component of the problem (setting events, antecedents, problem behaviors, and the consequences that maintain them).

Setting event strategies: These types of interventions address characteristics of the child and may include:
- Physiological or sensory issues
- Environmental variables
- Predictability
- Choice
- Life style quality

Antecedent strategies: These interventions serve to address the events that happen before and trigger problem behaviors. They include:
- Increasing predictability
- Providing choices
- Motivating cooperation (changing the way we make requests)
- Using "safety signals" to let the child know something is happening soon
- Pre-correction: prompting a desired behavior, or providing a reminder of what to do if
- Practicing a new or difficult behavior
- Using the "first- then" rule (eat a bite of this then you may have this)
- Providing additional help with new or difficult tasks

Teaching strategies: These are ways of teaching new skills that replace the problem behavior. They include:
- Teaching functional communication
- Teaching social skills
- Teaching new skills
- Using varying methods to teach (verbal, visual, physical assistance)

Consequence strategies: These interventions lead to a decrease in problem behavior and an increase in the use of functional replacement behaviors. We can be confident that a new consequence strategy is working by taking data using the A-B-C format we introduced earlier. Some examples of consequence strategies include:
- If we teach a communication skill, we respond appropriately to what the child communicates
- If we teach the child to make choices, we honor them
- If we promise an item or activity as a reward for the desired behavior, we provide it
- If we provide a negative consequence, they should not inflict pain or humiliation, or harm the dignity of the child

Some advice regarding consequences:
- They should be readily available and natural
- They should be provided as soon as possible following the desired behavior
- They shouldn't be too big or too small
- They should achieve the desired effect

Notes:

Activity:

Return to the story of Max. Using the table below, develop at least one intervention strategy for each feature of the problem behavior.

Setting Event Strategies	Antecedent Strategies	Teaching Replacement Behaviors	Consequence Strategies

In Summary:

No one will ever know your child as well as you do. You can learn to conduct a functional assessment to gain a better understanding of why problem behaviors occur and what you can do about them. Often problem behaviors are problems of learning. They may be associated with features of your child's disability.

You may wish to consult with a qualified professional to conduct a functional assessment and develop intervention plans. This is a good idea if your efforts do not produce desired results. We recommend that you obtain consultation if your child's behavior is potentially dangerous to him or herself or others, or if your family is being adversely effected by the behavior. Your local autism support group is a good resource for locating consultants. The resources section of this manual can help you locate links to a variety of behavioral and other consultants.

It is also a good idea to obtain a thorough physical and neurological examination to rule out or better understand any physiological or neurological problems that may influence the behavior of your child.

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Notes:

Pivotal Response Training (PRT)

Definition of Pivotal Response Training

Let's take a moment to define Pivotal Response Training. A pivotal response area is a group of skills that, when learned, help children with autism learn other skills better. So far researchers have defined 5 pivotal areas: motivation, responsivity to multiple cues, self-management, self-initiations, and empathy (Koegel, Openden, Fredeen, & Koegel, 2006). This means that when you teach your child skills in these areas, that he is more likely to learn new, unrelated skills more quickly. The "training" part of Pivotal Response Training refers to the teaching you or other caregivers provide.

PRT is also a naturalistic and global service delivery model (Koegel, Openden, Fredeen, & Koegel, 2006). Naturalistic refers to the materials used to teach in PRT. You will learn to use items that are already in your child's environment to teach her new skills like counting or the names of colors. For example, you may take a moment before getting into the car to count the other cars parked on the street, or name their colors. But keep in mind that you may also rearrange the natural environment to increase teaching opportunities. A global service delivery model means that the services you receive, which may include teaching your child, parent training, and coordination with health services or child care, are coordinated together so that interventions can complement each other. Global refers to how the services are meant to be ongoing in every aspect of the child's life. Teaching does not stop when school stops. Instead, teaching occurs during bath time and meals, and by parents, teachers, siblings, grandparents, and friends.

Definitions

When you teach your child skills in these areas, he is more likely to learn new, unrelated skills more quickly.

The teaching techniques used in PRT are well-researched, effective methods that have been used for many years in the Applied Behavior Analysis (ABA) teaching model (Koegel, Openden, Fredeen, & Koegel, 2006). PRT also uses a developmental approach (Koegel, Openden, Fredeen, & Koegel, 2006), meaning that professionals who use this teaching model take into account the age of your child, as well as her abilities, before teaching new skills.

Parents as Experts

Pivotal response training recognizes that you (and other caregivers e.g., grandparents, siblings, etc.) are the expert on your child. You know things about him that others may not know, like his favorite foods, toys, and other preferences. You have learned to recognize the unique and often subtle ways that your child communicates needs, feelings, and preferences. You have probably learned ways to get his attention, or motivate him to try new things. This information is essential to the PRT approach and makes you an important member of the intervention team.

What does PRT look like?

PRT represents an unlimited number of opportunities to teach your child throughout the day. You will learn to look for any initiations that your child may make, and recognize these as "teachable moments." Arranging your child's home and school environment to encourage more child initiations is one method used in PRT that increases teachable moments. For example, placing favorite items (toys, snacks) within the sight of your child, but out of reach, will create a learning opportunity. Instead of getting a cracker for herself, she will have to initiate by reaching or vocalizing. Below are a couple of examples of creating teachable moments from a PRT training manual (Koegel, Schreffirnan, Good, Cerniglia, Murphy, C., & Koegel, n.d.):

Lyle's family is having a picnic. On the table are three bottles, orange juice, grape juice, and orange soda. His son Ben says, "Juice." Lyle points to the bottles and says, "What kind of juice?" Ben says, "Grape juice."

Roger wants Kent to read him a bedtime story, a favorite nightly routine for both. Kent holds out three books and says to Roger, "Which story shall I read tonight?" Roger points to a Sesame Street book. "OK," says Kent. "I'll read that one." He holds out the book and looks at Roger. "Open the book,'" says Roger. Kent opens the book. "Look," says Kent. "There's Big Bird in front of the house. What do you see?" Roger says, "Oscar trash

PRT represents an unlimited number of opportunities to teach your child throughout the day.

For Example

can." Kent says, "I see Oscar in the trash can." Roger says, "I see Oscar in the trash can." "Good boy!" says Kent. "What color is Big Bird?" "Yellow!" Roger says easily.

In these examples, the child is motivated by items in the natural environment, the caregiver delivers a prompt, and then the child is rewarded with a natural consequence such as gaining access to the juice or book, or praise from a parent.

Five Pivotal Areas

As listed in the PRT definition, 5 areas have thus far been identified by researchers as pivotal areas. When families, teachers, and behavior specialists concentrate their teaching efforts in these pivotal skill areas, research shows that children with autism will have more success in other areas of their lives.

1. Motivation

Just like learning to identify teaching opportunities, you can learn to identify motivating activities and items throughout the day. What motivates your child will change continuously, perhaps from moment to moment. Getting down from a highchair may be the only activity your child is interested in at a particular moment, so in PRT this is used as an opportunity to teach. You or another caregiver may use this teaching opportunity for language ("Say 'down'") or as an opportunity to try a new food ("Try one bite of corn muffin and I'll help you down"). Either way the opportunities are naturalistic because both requesting to get down and eating, in this case trying new foods, is something typically done while sitting in a highchair. The motivating activity, getting down, will serve as a naturalistic reward for your child when he says "down" or tries a bite of muffin.

2. Initiations

When you ask your child "What color is Big Bird?" you are giving her a clue as to what type of answer you are looking for: she is to name the color of a specific object for you. But when you make a statement such as "I like Big Bird's yellow feathers" she may not respond because she does not have the skills to initiate a follow-up sentence. Individuals with autism spectrum disorders face great challenges in communication, and initiations are perhaps the most difficult (Krantz & McClannahan, 1993) because, unlike responding to a question, initiations don't provide the

What motivates your child will change continuously, perhaps from moment to moment.

individual with clues for how to respond back. This is true for all types of initiations including joint attention, requesting, commenting, asking questions, and beginning conversations (Fredeen & Koegel, 2006). In a study by Koegel, Carter, & Koegel (2003) two children with autism were taught to initiate interactions by asking "What happened?" and "What's happening?" while looking at child-chosen pop-up books. The researchers found that question-asking not only increased dramatically, but mean sentence length utterances, total verbs produced, and diversity of verbs increased for both children. Additionally, generalization of question-asking was acquired across locations, caregivers, and materials.

Consider this example:

Mia has taught her son Alfonso to say "I love cartoons" after he watches his favorite animated show. She did so by saying "Say, 'I love cartoons'" at the end of the show, and then waiting for him to say it. When they are in the library looking at children's books she closes a book they are looking at and she looks at him expectantly, but remains silent. He then says "I love books." She responds by saying "Me, too! Let's read some more."

Mia is teaching Alfonso to make initiations about events that just occurred by giving clear direct instructions, and then, in a similar situation she does not deliver the verbal prompt, but gives him an expectant look instead. She rewards Alfonso's use of new language in a naturalistic way by reading more of the book with him.

For Example

3. Responsivity to multiple cues

Individuals with autism typically exhibit a lack of response to multiple or relevant cues (Koegel, Koegel, & McNerney, 2001), meaning that a child may only focus on one or few items at a time instead of seeing "the big picture." For example, you may notice your child always runs to the same swing at the playground and ignores the slide and monkey bars, or gets his blue socks when you asked for the white socks. Try thinking of responding to multiple cues as a specific skill that you can teach. Responding to more than one thing, or cue, in the environment refers to your child's ability to pay attention and respond to several things as once. Research by Burke and Cerniglia (1990) showed that children who were taught to attend to multiple cues in the environment have enhanced attention to social cues and increased their overall learning and skill generalization.

Explicit teaching of this skill involves identifying sets of objects in the environment that have some distinguishing characteristics, such as different colored pens and pencils, or large and small colored blocks. The individual will then be asked to respond to more than one of the "cues" such as color and object name (Koegel, Schreibman, Good, Cerniglia, Murphy, & Koegel, 1989). For example, you have several different pens and pencils in a can on the table. By giving a prompt such as "Give me the green pencil" you are asking your child to pay attention to pens, pencils, and colors; therefore your child is practicing attending to multiple cues. Please note that your child will have to already know her colors and the difference between pens and pencils to make this response without guidance. Expect to give your child immediate assistance if she has not yet learned these distinctions.

4. Self-management

Self-management is a skill for decreasing disruptive behaviors such as self-stimulatory behavior (e.g., hand flapping or gazing at lights) or crying. Individuals with mild to severe disabilities can learn self-management techniques (Koegel, Koegel, & Parks, 1992). This involves learning a set of skills. Your child will learn to identify his own disruptive behavior and determine whether he has engaged in that behavior within a timed interval or the span of an activity. Next, he will learn to accurately record his behavior using a small worksheet or other device such as a golf counter. Then he will take or withhold a reward depending on whether he's engaged in the disruptive behavior. To illustrate, your child may be taught to identify his own hand-flapping as a non-preferred behavior, keep track of each occurrence on a small data sheet, and give himself a point toward earning a music break for each interval in which the behavior does not occur. When he has 5 points he takes his headset and listens to a favorite song before going back to his activity.

5. Empathy

Because the verbal repertoires of individuals with autism tend to center on requests and protests (Wetherby & Prutting, 1984), making empathetic statements to expand conversation skills is a pivotal area which will help your child have social interactions that others find pleasant and rewarding as well. You may have noticed that children with autism frequently redirect conversations back to their favorite topics. If you talk about going to the store, your child responds by saying something about Clifford the Big Red Dog. And if you mention having dinner soon, she responds by asking

By giving a prompt such as "Give me the green pencil" you are asking your child to pay attention to pens, pencils, and colors; therefore the child is practicing attending to multiple cues.

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to watch Clifford! As your child learns to make reciprocal, empathetic statements her common patterns of conversation will begin to be replaced with speech that is reactive to that of her conversation partner. Rather than making several statements about a preferred topic, she can learn to respond to statements made by others. For example, "We're going to visit Moira today" would be followed by a statement such as "Moira has a dog" or "I like Moira" instead of responding "I love Clifford!" (Koegel, Talebi, Koegel, & Carter, 2006).

This skill can be taught in many ways. Here's an example of how you might arrange the natural environment to teach your child to say things about visiting your friend Moira:

For Example

Laura places a couple of photographs onto the refrigerator of her friend Moira at a height which her daughter Sara, who has autism, can see. One photo shows Moira and her dog, and one shows Moira playing ball with Sara. Often when they are in the kitchen, Laura and Sara look at the photographs and Laura makes brief statements, modeling language that Sara can imitate. For example, "Moira's dog is big" or "Moira throws the ball." The next time Laura says "We're going to visit Moira today" Sara says, "Moira throws the ball." This statement is reactive, or empathetic to what Laura just said.

Reducing Disruptive Behavior

Individuals with autism may engage in disruptive challenging behaviors that not only frustrate others but interfere with their own learning and quality of life. This is especially true if the behavior is aggressive or self-injurious. It is important to note that the first and foremost reaction to challenging behavior should be an assessment of your child's physical well-being for he may be experiencing pain or discomfort due to illness or injury. However, researchers and practitioners feel that many of these behaviors are often displayed because the individual does not possess the language skills to express his needs (Frea, Koegel, & Koegel, 1994).

Functional assessment (FA) is a tool that helps examine a target behavior in terms of setting events, as well as describing the behavior and the consequences that make the child likely to engage in that behavior again. During a functional assessment, a professional makes a record of several things: the time the disruptive behavior occurs is recorded, as well as a description of the behavior, and what events happened before the child engaged in the behavior. What happens after the behavior occurs is recorded as well. A caregiver or professional will look at the information

Disruptive behaviors are often displayed because the individual does not possess the language skills to express his or her needs.

(data) they've collected and draw a hypothesis as to what the child gains (the function) from the behavior. Next, an intervention plan is put in place that will help the child replace the challenging behavior with one that serves the same purpose in a pro-social way (Frea, Koegel, & Koegel, 1994). An example of this "behavior replacement" might be a support plan that teaches the child to say "help please" when she is frustrated with a task, rather than crying or hitting.

Activities

Skill Builder

1. **Teach yourself to identify naturalistic teaching opportunities:** Identify two skills you can teach during lunch or dinner and two skills you can teach while playing your child's favorite game.

2. **Think about what is motivating for your child:** Write down several of your child's favorite activities that are socially appropriate (no stereotypy!) and then list some things that he finds difficult. After teaching your child a new difficult task for a *very brief* period, do one of his favorite activities.

3. **Help your child learn to initiate:** Put some of her favorite toys on a shelf where she cannot reach them, but she can see them. When she reaches or vocalizes, ask her to name the toy before giving it to her. If she can already name them, ask her to say a short sentence before giving it to her, such as "Say 'Red ball, please.'"

When you are reading a book to your child, don't turn the page right away. Let him vocalize or motion for you to turn it. Then say "Let's turn the page" or "turn" and have him imitate before you do so.

4. **Teach attending to multiple cues:** At snack time, take three preferred items out that are in different packages and put them on the table. Ask your child which one she wants, the one in the red box, blue bag, or white Tupperware.

5. **Teach the first steps to self-management, identifying appropriate and inappropriate behavior:** When your child is working appropriately without any disruptive or stereotypic behavior, identify the *appropriate* behavior and give him a break or a treat, such as "Your hands are quiet! Let's watch a cartoon and then do more spelling." If he is waving his hands during a task say "Show me quiet hands" and model or physically prompt "quiet hands," and then say, "When you work with quiet hands, we'll take a break and blow bubbles." Use an excited voice when he is appropriate, and a neutral voice when he is not.

6. **Teach your child to make empathetic remarks or statements:** Make a small picture book or photo album by pasting pictures onto construction paper and putting them into a 3-ring binder. Add a button-activated voice recorder and record single words or statements that relate to the pictures on each page. Look at the book with your child and make comments (no questions!) and prompt her to press the button and repeat what it says. For example, the first page has a picture of sunflowers and you say "What pretty yellow flowers!" Prompt your child to press the button and imitate the recorder when she hears it say "Sunflowers," "Yellow," or "Flowers are pretty."

Definitions

Listed below are some definitions that you may find helpful for learning about the behavioral intervention, Pivotal Response Training.

Behavioral: Teaching methods that are behavioral concentrate on observable events such as the skills a child has, or the way she reacts to certain events or stimuli. Example: Joy's teacher has observed that Joy looks away and frowns when she is asked to write letters although she can write neatly. Joy smiles and giggles a lot when she is blowing bubbles. These two observable events lead the teacher to make two decisions: Writing tasks should be short in duration and followed by a preferred activity such as blowing bubbles.

Learner: Anyone who is learning a new skill or concept. Example: You are the learner as you read this manual and your child is the learner as she practices saying new words.

Target behavior: The behavior of interest. Example: When a child is learning to swing, the target behavior is sitting on the swing seat and pumping her legs. Behaviors such as toe-walking are often referred to as target behaviors when talking about strategies to reduce disruptive behaviors.

Pivotal area: When teaching efforts are targeted on a particular area of learning and the acquisition of this new skill helps the learner in several other areas of learning, that targeted area of learning is said to be a pivotal area. Example: Your child learned to initiate questions while reading books with you and his teachers. Now he asks questions about new objects he sees as he is riding in the car with his grandfather. Initiations are a pivotal area because once a child learns to initiate, he is much more likely to do so under many different circumstances without further teaching.

Definitions

Naturalistic Teaching Models: Teaching methods that use items and strategies and rewards which are likely to occur in a typical environment are naturalistic. Example: Pivotal Response Training is a naturalistic teaching model because a child's own favorite toys may be used to teach different colors or sets of objects: Blue ball, yellow bird, red whistle, etc. The child receives naturalistic rewards by getting to play with the objects, instead of tokens or access to a different item.

Collateral effects: When teaching one or few skills has an effect on many skills and impacts the learner's quality of life, the effect is collateral. Example: When your child learns the names of the other children in the neighborhood (a new skill for her), she gets more attention from those children because they are excited to interact with her when she says their name.

Generalized/generalization: When skills taught in one set of circumstances are later displayed under different circumstances, the skill has generalized to the new circumstances. Example: A child says his ABC's at home for his parents, and is then also able to say them at school for his teacher.

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Effective Teaching

What are Activity Schedules?

An activity schedule is a group of tasks, games, or leisure activities that have been gathered together in a book or list that directs a person to engage in one activity after another. Activity schedules may be a series of written words, like a to-do list, or make use of photographs or other pictorial cues that are placed in a 3-ring binder. As technology becomes more widely available, teachers and parents are incorporating other types of cues into schedules such as button-activated voice recorders (the small devices that are used in talking dolls) or putting activity schedules onto personal hand-held computers (e.g., palm pilots®).

It is important to note that we all use activity schedules in our everyday lives such as appointment books, to-do lists, and recipes. Most people would feel lost without their calendar to help remind them of important tasks and events. The types of activity schedules we make for our children with autism look a bit different but serve the same purpose: to help them stay focused so that they can complete their goals for the day. As children learn to use photographic activity schedules we can begin to slowly change them to look more like the ones we use.

Why Teach How to Use Activity Schedules?

When a child with autism learns to use an activity schedule she will be able to work independently for increasing amounts of time. Although some skills will have to be taught before a child becomes an independent

We all use activity schedules in our everyday lives. Most people would feel lost without the tools that help remind them of important tasks and events.

schedule-follower, this initial investment of time will allow your child to become less dependent on others' verbal instructions so she can spend more time appropriately engaged in meaningful activities. This is also beneficial for parents and other caregivers because your child's independence allows you additional time to complete your to-do list!

Following Schedules

Skills for picture schedules

Your child will need certain skills in order to follow a picture or photographic activity schedule, and he may already possess some of them. In their book *Activity Schedules for Children with Autism: Teaching Independent Behavior*, Krantz and McClannahan (1999) review the skills necessary for following schedules:

Skill Builder

Identifying Picture versus Background: This means that the child can identify the picture as the relevant item on the page, seeing it as distinct from the background. You can test your child's ability of this skill by pasting some pictures to pages of construction paper, showing them one at a time to your child and asking "Where's the picture?" or "Point to the picture." Take data on her performance so you know for sure whether your child is improving on this skill.

Matching Identical Objects: Before your child can learn that the picture of an object or activity means that she should engage in a specific activity (called picture-object correspondence), she may need to learn to match actual objects. You may start with matching large distinct 3-dimensional objects like cups or blocks, and then move on to flat objects and see if she can match identical stickers or paper shapes.

Picture-Object Correspondence Skills: If your child can match identical objects, now you can teach him that pictures represent objects. Make a book from a small 3-ring binder and construction paper that has a few of his favorite objects depicted, with one on each page. Guide him to point at the picture and say "point." Then say "find" and guide him to pick up the corresponding object. Make this activity fun by including lots of praise and attention for paying attention and correctly retrieving objects. Keep teaching sessions very brief initially. When your child starts to have some independent success you can gradually increase the length of teaching sessions.

Accepting Manual Prompts: Some children don't mind being guided with manual prompts where others may cry, scream, or run away if you attempt to guide their actions with your hands. Good news! You can teach your child to accept manual prompts! Start by thinking of some of her favorite snacks and activities. Little by little and throughout the day, begin guiding a couple of her movements just as she is sliding down the sliding board or reaching for a favorite snack. If she accepts these brief moments of guidance, increase them bit by bit until you can guide her hands, arms, and shoulders without resistance. It is important to do this slowly and stop while she is still happily accepting prompts, rather than get over-excited, guide her too many times, and have her begin crying because she's "had too much" for that session.

Skills for word schedules

Your child does not necessarily have to read full text in order to follow word schedules. He may be able to recognize single words that will represent the items on a schedule. These are called "sight words" or referred to as "sight reading." The advantage to using word schedules is that they are smaller and more compact than photographic schedules, making it easier to use them at school and in the community. They also look more like a to-do list, which helps your child appear more competent in the eyes of others.

Gradual increases of time and number of activities

Initially, schedules should be short, perhaps 5 or 6 brief highly-preferred activities so that your child learns that his schedule is fun and rewarding, and that he can acquire this new skill quickly. When your child masters his schedule, you can begin adding new picture pages and then re-sequencing some of the pages. Add new pictures one at a time and start with preferred activities. Keep in mind that when changes have been made to a schedule you will need to be there to teach these changes and prevent your child from making errors (Krantz & McClannahan, 1999). You will find over time that as your child increases his skill repertoire that he can complete a longer schedule. This is a very rewarding and satisfying feeling for you and your child.

You will find over time that as your child increases his skill repertoire that he can complete a longer schedule.

Activities to Include in a Schedule

Soon you will find that you can change the schedule daily to suit the needs of both you and your child. If you have time to teach new activities go ahead and include them in her schedule that day. If you need to make a phone call or repair the sink, only put activities in the schedule which she can complete without your assistance.

As previously mentioned, you will initially want to include activities that are highly preferred by your child. Try teaching play activities such as bouncing on a hippity-hop or riding a scooter. You can also teach other fun activities like blowing bubbles or completing simple puzzles. The activities should be very brief for your child's first schedule. Be sure to include some social skills activities that are appropriate for your child's skill level, which may be a picture exchange for a tickle or hug for a non-verbal child, or a brief conversation starting with "Hi Mom. Watch me play" for a child with strong verbal skills.

When a short, fun activity schedule has been mastered, you can begin to add brief activities that are not as preferred. If your child doesn't particularly like cutting shapes, only cut one shape (or less!) to start, and then sequence the activity schedule so that he then gets to do an activity he likes very much. Slowly increase the amount of time you spend on the less-preferred activity until he is cutting a few shapes. If your child really dislikes cutting shapes, don't make this part of his activity schedule until he has been following schedules for quite a while.

As your child gets older you will need to incorporate more homework and chores to her schedule. Intersperse these activities with other activities that she likes so that she continues to enjoy completing her schedule. This is similar to the way many adults have a coffee break or brief chat with a friend or co-worker during the workday. If your child begins to resist following her schedule, take some time to think about the activities that are included and change them, re-sequence them, or shorten the duration of less-preferred activities for the time being, and slowly increase them again.

Children accustomed to following schedules can learn to follow a "sub-schedule." This is a schedule of separate tasks that your child will complete before returning to his main schedule. For example, his main schedule may have a color-coded prompt of two red dots. Your child then goes to a shelf and finds the binder with two red dots on the spine, which perhaps has a schedule to make jelly crackers. He then makes the jelly crackers, returns the sub-schedule to the shelf, and then goes back to his main schedule to find the next activity.

Systematic Instruction

Teaching methods: manual guidance

Manual guidance is the process of guiding a person's actions with your hands as you stand behind them in order to teach skills. Manual guidance is not often used with children who are typically developing because there are many other ways to teach them that will lead to success, such as giving verbal instructions or modeling a skill sequence. However, typical teaching methods may not work for children with autism because they allow them to make errors. When a child with autism makes an error, she is more likely to repeat it than her typical peer (McClannahan & Krantz, 1999). If these errors occur again, they may become very difficult to "un-teach."

Before describing the steps of manual guidance it is important to mention a few things to keep in mind as you teach new skills with this method. First, you want to make yourself as unnoticeable as possible by staying behind your child, not making eye contact, and by refraining from talking unless the activity calls for social interaction. You also want to keep manual prompts as light as possible. By making yourself less noticeable you will increase the likelihood that your child will perform these new tasks independently. If your child perceives that you are an important part of the activity, he is *less* likely to engage in scheduled activities when you are not there.

As McClannahan and Krantz describe (1999), manual guidance should be systematic: that is, you begin with certain steps and "fade" your guidance according to the success of the child. If the child makes errors you go back to using the previous guidance step. The first step in manual guidance is hand-over-hand prompting. This is when you stand behind your child and put your hands on top of his. Guide him to point to the picture in his schedule and then guide him to gather the materials he will need to complete the activity, and continue through the activity sequence. After a couple of times performing the same activity, you will find that you can feel him making the movements on his own. This is when you begin the first fading step. Move your hands back to his forearms or elbow and continue to guide him through the sequence to prevent errors. Again, judging by the feel of his movements, fade your prompts to his shoulders as he begins to "get ahead" of your prompts.

The next steps in the fading process are called shadowing and decreasing proximity. Shadowing is performed by keeping your hands very close to your child's arms and following his movements without touching him. If

Definitions

When a child with autism makes an error, she is more likely to repeat it than her typical peer

he continues his activity without making errors, move your hands farther and farther away (McClannahan & Krantz, 1999). This brings you to the step of decreasing your physical proximity. Begin to move away from your child only after he has followed all of the steps in his schedule correctly while you were shadowing him (McClannahan & Krantz, 1999). You should only move a couple of steps further back each session. Remember! This is called fading, and it should be done slowly so that your child doesn't notice you changing your position. Following this procedure patiently will increase the likelihood that your child will continue to follow his schedule appropriately when you've reached your ultimate goal: fading your presence out of the room.

When you have faded your presence out of the room, you will still need to peek in on your child, frequently at first and intermittently later, to ensure that he is appropriately engaged and following his schedule. If he is not, return to the previous fading step where you are standing in the room. If necessary, you will go back to shadowing, prompting at the shoulder and so on.

Manual Guidance Teaching Steps: The Most-to-Least Prompting System	Looks Like:
Hand-over-hand prompting	Standing behind your child, you guide his hands to correctly point to his schedule and manipulate objects.
Guiding at the forearm or elbow	Placing your hands on your child's elbow or forearm, you guide his arms in the general direction that the activity currently requires.
Guiding from the shoulder	With your hands on your child's shoulders you make sure that he is facing his activity materials and he remains appropriately engaged. You can guide him to stand up and help orient him towards the next step, such as turning to the kitchen to get some water or juice.
Shadowing	Keeping your hands just a few inches away from your child's elbow, you will be ready to prompt in a split second if necessary. Your child will be slightly aware of your presence, but also completing tasks without manual prompts.
Decreasing physical proximity	At first you will be standing just a couple of feet behind your child, following him as he moves about the room completing his tasks. Each session move a little farther away, until you are just watching from the edge of the room. Then step out of the room, watching from the other side of the doorway, and eventually leave to another room and peek in every few moments. Decrease "peeking in" until you are only doing so a couple of times per schedule.

Use your judgment to break these rules when it makes sense to you. For example, you don't need to keep your hands on your child's hands if he is walking across the room. Using a shoulder prompt is more appropriate at these times even if you are in the hand-over-hand step of teaching. Also, if your child can complete his entire schedule independently except for one step, then go ahead and fade back until that step comes up in the schedule. Then nonchalantly move closer to him and provide the necessary prompts for that step.

How to Make an Activity Schedule

To make a picture activity schedule you will need photographs, a 3-ring binder (any size is fine, but a 7x9 inch binder is especially practical), plastic sleeves that correspond in size with the binder, construction paper, and glue stick. The photographs can be either pre-printed, such as from the Boardmaker program, cut from magazines, or ones you have taken. They should be clear and representative of the activity in which you want your child to engage (a photo of the scooter should mean riding the scooter, not just any play activity). The advantage to taking your own photographs is that you can match items exactly and you can eliminate the problem of having items in the background which may distract your child from the prompt you intend to give him (e.g., make sure the photo of a bag of chips doesn't have a TV in the background, or your child might not know to which item she should attend). The advent of digital cameras also means that you can print several photos on one sheet of regular office paper. Cut the pictures out and paste one picture per page onto construction paper that has been cut to fit into the plastic sleeves. Insert pages into the sleeves and the sleeves into the binder. Using this method you will have an activity schedule that can easily be added to, re-sequenced, and changed from day to day.

Making Use of Technology with Activity Schedules

Button-Activated Voice Recorders

It's a great idea to include language models into activity schedules. One way to do this is to include button-activated voice recorders into the activity book. These are small devices that record between 10 and 20 seconds of your voice and play it back each time your child presses the

Skill Builder

It's a great idea to include language models into activity schedules.

button. Teach this as part of the schedule. You can record over previous recordings again and again, allowing you to change language models.

Some companies have already done some of the work for us and created photo albums with voice recorders built-in on each page. Search "talking photo album" on Google or other search engine for a selection of photo albums with built in voice recorders. Prices vary from about $15.00 to $45.00, so look around before you buy. Add a language model on each page that is appropriate for the activity such as "play time" or "pretzels are yummy."

Timers

Some activities don't have a specific cue that tells your child that it is time to go back to her schedule. For example, when all the puzzle pieces are put together, it is time to clean up the puzzle, but when does watching TV or videos end? Young children can learn to use digital kitchen timers to signal when it's time to go back to their schedule (McClannahan & Krantz, 1999). Select a digital kitchen timer that only has minutes or just minutes and seconds. Some timers have hours, alarms, and multiple settings. Avoid these. Most adults can't figure them out! Use a photograph of the timer and color-code the buttons with tape or stickers. Use a dot of the corresponding color under the picture of the timer to represent which button to press. For example, the black button clears the timer, so put a photograph of the timer with a black dot underneath it for the first picture prompt. Next, sequence 3 pages that have a picture of the timer with a white dot underneath that represents the minute button. This will teach your child to set the timer for 3 minutes. The next page should have a colored dot for the start button. The following page on the schedule will have the activity that you want your child to do for 3 minutes.

Velcro

This may sound crazy, but the technology of Velcro cannot be understated when making activity schedules. It allows a non-verbal child to easily remove pictures from a schedule to exchange them for an activity or snack. Simply laminate or slip the photos into a plastic baseball card protector and use Velcro dots to attach them to the outside of the plastic sleeve. You can also stick button-activated voice recorders into schedules this way, or stick two activities side by side and teach your child that he has the choice of which one he'd prefer.

Palm Pilots

Have you noticed how much more comfortable the "under 30" generation is with computers? That's because they grew up with them. Your child's disability should not exclude her from learning computer skills at a very young age. As your child gets older, she will look quite competent referring to her palm pilot rather than a 3-ring binder, especially when she is in the community shopping, paying for a meal in a restaurant, or checking her work schedule. As with most technology, the price of hand-held computers is decreasing. Some models will allow you to upload photographs for photographic activity schedules and you can make checklists or time appointments for learners with good reading skills.

Digital cameras

Digital cameras are available in a variety of price ranges, and used ones can be found cheaply on internet auction sites. "Disposable" digital cameras are even available in pharmacies and super-stores. They are a wonderful tool for making activity schedules because you can take pictures of the exact materials that your child will be using, in the exact location he will be using them. Pictures can even be printed on regular paper or on banner paper (a glossy photo paper is not necessary). Software is also becoming more user-friendly all the time, allowing people who are not very computer-savy to print pictures rather easily. Alternately, you can modify and print digital photos at small kiosks in almost any pharmacy.

Computers

Some teachers and researchers have been using PowerPoint® slide shows as a replacement for the 3-ring binder style activity schedules. This allows children to learn computer skills at the same time they are learning the skills for completing activity schedules. Since many children with autism seem to find working on the computer reinforcing, this method seems to be a natural match (Stromer, Kimball, Kinney, & Taylor, 2006). Some added advantages are that you can add video and voice models with relative ease (Kimball, Kinney, Taylor, & Stromer, 2003). Keep in mind that social activities should still be included in these schedules so that children with autism do not isolate themselves when they use the computer.

Your child's disability should not exclude her from learning computer skills at a very young age.

Keep in mind that social activities should still be included in these schedules so that children with autism do not isolate themselves when they use the computer.

Data collection is a very important part of teaching your child with autism because it represents his progress in a graphic format that is easy to read.

Taking Data

Taking and graphing data will help you answer many questions and concerns that arise during teaching such as:

○ "When should I begin fading my prompts?"
○ "How long ago did we add the new picture prompts?"
○ "It seems to me that he always makes that same error. Perhaps we should consider modifying that task for him."

Data collection is a very important part of teaching your child with autism because it represents his progress in a graphic format that is easy to read. Also, upon analyzing data both families and professionals sometimes find that they thought they were "seeing" progress that the data collection showed hadn't really been achieved yet. Below are the steps for taking data on following activity schedules.

McClannahan and Krantz (1999) recommend breaking each activity into a 5-step process, and marking each one with a plus (+) sign or minus (-) sign depending on whether you delivered any prompts during that step. Mark unnecessary steps as NA. You can use the sample data sheet here as a model:

Observer:					
Date:					
Activity	Opens Book/ Turns Page	Points/ Looks at Picture	Obtains Materials	Completes Activity	Puts Materials Away
Spin tops	+	+	+	-	-
Cut shapes	+	-	+	-	-
Find Sam/say Hi	+	+	NA	-	NA
Match letters	-	-	+	-	-
Snack/string cheese	+	+	-	-	+
# Completed	4	3	3	0	1
Number of components correctly completed: 11					
Total number of components: 23					
Percentage of components correctly completed: 48%					

Once your data sheet is made you can begin teaching. You don't need to take data every time you teach. Every few sessions or once a week should be enough. When hand-over-hand prompting you may find it difficult to

mark the data sheet. See if you can enlist help from a family member or friend, or use a tape recorder and say each step and "plus" or "minus" into it after each one, depending on whether you delivered a prompt (McClannahan & Krantz, 1999). Manual prompts of any kind, hand-over-hand, at the elbow or shoulder count as a prompt and minus (-) should be scored on the data sheet. Shadowing and fading proximity are not counted as prompts, but should be marked on the graph. Since your teaching will begin with hand-over-hand prompting, you may see that your first data point is 0% unless you have included an activity that your child can already partially complete on her own.

You will need to purchase graph paper in order to plot your data points. Label the graph as follows: The left vertical side should be marked every 10 lines, from 0 to 100. These are for your percentage of steps completed independently. The bottom should be labeled with the date as you go along, or month by month and use each line as a day of the month. Label the top of the graph with the activities in the schedule.

Before you plot your first data point, you will need to figure out the percent of steps that your child completed independently (without prompts). To do this divide the number of steps completed correctly by the total number of steps and multiply by 100. This is the number you will put on the graph. Mark any special events that might have affected the data such as the first time you introduce a new photograph or when you decrease your prompts (McClannahan & Krantz, 1999).

The most important step in taking data is to **use your graph to make decisions** about teaching. For example, when your child is able to complete all of the steps of this schedule with prompts at the shoulder it is time to begin full shadowing. When you have faded your presence out of the room and he is still completing steps independently try re-sequencing activities or adding new ones, marking the graph, and teaching these new steps for a couple of sessions. Then quickly fade your presence again.

Please note that this process of errorless teaching may take some time, perhaps weeks depending on the tasks and your child's abilities. Your data will help you see the progress your child is making. Your patience and diligence will be rewarded by your child's ability to work and play independently.

Your patience and diligence will be rewarded by your child's ability to work and play independently.

Skill Builder

Activities

Teach your child to accept prompts:

Take out 2 or 3 of her favorite snacks and break or cut them up into small pieces and place them on a table. Stand behind her or sit her on your lap in front of the snacks. As she reaches for a bite gently place your hand on hers, using a very light touch. When she accepts the prompt make the process of eating even more fun by giving her kisses or tickles. Be sure to use lots of praise such as "That's great letting me help!" If she does not accept the prompt, try shadowing her movements for a couple of sessions before you put your hand on hers again.

Make an activity schedule:

Brainstorm for several minutes and write down any activity your child enjoys doing. Choose a variety of tasks that you can set up easily in your home. Find or take pictures to represent the activities. Put them into a book as previously described and you'll have your child's first activity schedule!

Make a task analysis for a sub-schedule:

Write down all the steps for washing your hands, making jelly crackers, or other activity. This can be a lot of fun if you test run the activity with a spouse or other family member by telling them to engage in each step and see if you left out any critical steps. Small steps can be taught as part of the schedule. Take photographs to represent each step. Make into a schedule. Here's an example of a task analysis for hand washing. You can turn a task analysis into a data sheet by adding a plus/minus column.

+/-	Hand Washing
1	Turn on water to warm
2	Wet hands
3	Pump soap into hands- only one pump
4	Rub palms together for a count of 5
5	Rub top of left hand for a count of 5
6	Rub top of right hand for a count of 5
7	Rinse hands- rub hands under water for a count of 5
8	Dry hands on towel
_____ /8 correct	

Effective Teaching

Definitions

Prompt - A prompt is anything that gives a cue to someone telling her to engage in a certain activity or give a certain response. This includes verbal instructions, manual guidance, photographs, pictures, sounds, and many more. Examples include guiding a child's elbow to help her point to a photograph, or looking at a photograph of a swing set so she knows it's time to go play on the swings. Or hearing the front door open and close might prompt her to go see her brother when he comes home from school.

Manual Guidance - Manual guidance is a way of teaching a skill wherein an instructor stands behind the learner and physically guides him through a skill sequence. The most-to-least prompting system begins with hand-over-hand guidance and prompts are then decreased by the instructor moving her guidance to the elbow, shoulder, shadowing, and decreasing her proximity to the learner. By starting with hand-over-hand guidance, the instructor is preventing the learner from making errors that the child could inadvertently learn as part of the skill set.

Systematic Fading of Prompts - By making your prompts less and less noticeable over the course of teaching sessions, you are fading them. Make it systematic by keeping track and fading only when your child is successful with the current level of prompting. The procedure of fading manual guidance described above is an example of systematically fading prompts. You can also fade pictorial and auditory cues by decreasing the cue little by little until your child can perform the task independently or with just a very small cue.

Resources

Kimball, J.W., Kinney, E.M., Taylor, B.A., & Stromer, R. (2003). Lights, camera, action!: Using engaging computer-cued activity schedules. *Teaching Exceptional Children*, 36(1), 40-45.

McClannahan, L.E., & Krantz, P.J. (1999). *Activity schedules for children with autism: Teaching independent behavior.* Bethesda, MD: Woodbine House.

Stromer, R., Kimball, J.W., Kinney, E.M., & Taylor, B.A. (2006). Activity schedules, computer technology, and teaching children with autism spectrum disorders. *Focus on autism and other developmental disabilities*, 21(1), 14-24.

Websites

Please note that website links often change which is why the web addresses provided below are to main pages, not direct links to the pertinent articles. Also included are the names of the organizations so in the event that a main page address is changed, you can still conduct a search for the organization.

Princeton Child Development Institute: http://www.pcdi.org

A video and DVD of teaching children to follow activity schedules is available through the Princeton Child Development Institute website. Though costly at $120.00 for two tapes, they will illustrate much of the material mentioned in this section of the manual. To offset the cost you may be able to share the expense with other parents or ask your school or local library to consider purchasing them.

Talking Presents.com: http://www.talkingpresents.com

This website has two different models of button-activated voice recorders.

Joe's Schedule.com: http://www.joeschedule.com/js3col_index01.htm

This website has sample schedules and good examples of how photographs for activity schedules should look. It will also give you ideas of how to expand schedules as your child learns how to follow them.

Social Skills Training

A fundamental characteristic of the autism spectrum disorders (ASD) is impairments in the area of social interaction. These social problems may be manifested in the following ways:

- ○ Impairment in the use of non-verbal behaviors. This includes not making or sustaining eye contact; using or interpreting facial expressions; using appropriate body posture, and gestures to engage in social interaction.
- ○ Problems developing and maintaining relationships with peers of similar age and developmental level.
- ○ A lack of spontaneous sharing of interests, accomplishments, and enjoyment with others. In young children this might be demonstrated by the child not showing, bringing, or gesturing toward items of interest.
- ○ A lack of social or emotional responsiveness. This could include children being seemingly unaware of the emotions of others (they are also often unaware of their own emotions).

The degree to which these social problems are present varies from child to child. The language skills children possess contribute to their level of social skills. However, children may possess sophisticated language and have difficulty knowing what words to say in a particular situation. These children can learn language that will enable them to participate in social interactions, interpret what others are saying to them, and respond appropriately. Non-verbal children can learn to use assistive technology or sign language to help them communicate appropriately with others.

Non-verbal children can learn to use assistive technology or sign language to help them communicate appropriately with others.

Children with ASD can learn in familiar ways. We simply may have to do more teaching, structure the teaching, provide tools, and use effective reinforcement to motivate participation and promote learning.

Definitions

Social skills are complex, and most typically developing children learn them through observation, direct instruction ("say thank you when someone gives you something") and feedback from adults and more competent peers. Children with ASD often have difficulty with observational learning, and direct instruction may involve repeated instruction, modeling, prompting, feedback, and reinforcement. Children with ASD can learn in familiar ways. We simply may have to do more teaching, structure the teaching, provide tools, and use effective reinforcement to motivate participation and promote learning.

Children with ASD may display a lack of interest in social interaction. This may be because they find it too difficult; because they do not understand what is expected or required in a situation; or because they have not previously been successful, and so lack motivation. Knowing how your child processes sensory information is an important part of deciding what and how to teach social skills (refer to chapter two for a review).

A first step in deciding what skills to teach is to evaluate the types of social skills your child needs to interact at home, school, and in the community. For very young children, looking at someone when they are speaking, using appropriate volume and voice tone, using appropriate touch, sharing, playing a game, etc., are examples of social skills that may be taught. Jed Baker (2003) has developed a social skills menu that you can use to begin considering social skills to teach. Dr. Baker has developed a social skills picture book that uses written and visual information for teaching social skills to young children (2001).

The following is a brief description of general approaches that have proven effective in teaching social skills.

Direct Instruction is a systematic method of teaching a variety of skills. It typically uses strategies that include modeling, cueing, prompting, practice, and feedback or reinforcement. The strategies parents choose depend upon a child's skill level and the skill to be taught. It is critical that children have the opportunity to practice the social skills learned through direct instruction in real world situations.

Modeling simply involves demonstrating the skill you want your child to learn.

Cueing involves using verbal or visual stimuli to get the child's attention and present a task or activity.

Prompting involves using words, gestures, and physical touch to facilitate the appropriate response.

Feedback includes the types of responses a parent uses to shape or correct child behavior.

Reinforcements are responses parents use to encourage or reward a child's behavior.

Let's look at an example. Sam is a three year old who is non-verbal. He is learning to follow simple directions. His parents would like him to participate in a game of catch using a large soft ball. First, Sam's parents sit across from each other on the living room floor. Sam is seated on the couch watching. Sam's mother says "Dad let's play catch." They model the game of catch several times. Then, they cue Sam by presenting the ball to him and saying "Sam, let's play catch." Sam's father sits behind him on the floor while his mother sits opposite Sam and says "catch the ball." Sam's father gently holds his hands and physically guides them to close around the ball (physical prompting). When Sam does not catch the ball, his mother says, "Good work, let's try catch again" (feedback). After several trials (practice), Sam catches the ball. His mother smiles and says "good catching, Sam." His father gently tickles him (reinforcement). As Sam becomes good at catching, his father can remove his hand-over-hand physical prompting, and gently support or briefly guide Sam's movements. Eventually verbal prompts may be all that is necessary to help Sam play catch.

Incidental Teaching is the process of conducting instruction in natural settings and routines. Parents or teachers can use visual cues to help children know what and/or how to engage in a social interaction. For example, Todd likes to place his face very close to someone else when he is speaking to them. This makes other children uncomfortable. Todd's parents have taught him (using direct instruction) that he should not stand closer than an arms distance from people when speaking to them. They do this by modeling, placing an arm between them, and then practicing with Todd. Todd's sister also models this for Todd. When Todd gets too close, his parents or sister will say "too close" and use an extended arm gesture to model appropriate distance.

Interestingly, once Todd began using appropriate distance, he began speaking more loudly (perhaps he thought the person could not hear him across such a distance). So, his parents began using direct instruction and incidental teaching to model and prompt appropriate voice level.

For Example

Visual information makes abstract social concepts more concrete, and can provide permanent and portable cues that remind children what appropriate behaviors look like.

For Example

Definitions

Using Visual Information

Many children with autism have problems with language and attention that interfere with learning. For these children the use of visual information can help them to understand what is expected and/or required in social situations. Visual information makes abstract social concepts more concrete, and can provide permanent and portable cues that remind children what appropriate behaviors look like. These visual aides can include cartoon drawings with written captions, photographs, computer programs, or video-taped demonstrations.

Robert is a four year old pre-school student in an inclusive school setting. During morning circle time, he often rocked and flapped his arms while other children sat quietly and listened to the teacher and each other. Robert's parents and teacher had used direct instruction and modeling to teach him appropriate sitting and attending behaviors, without much success. His teacher used a verbal prompt, "no rocking, hands in lap" and modeled this. She also recognized other student's appropriate sitting and attending behavior.

Robert's mother drew pictures of appropriate sitting and attending behavior and sent these to school in a special notebook. The teacher showed these to Robert prior to circle time. Robert's dad used a video camera to record his behavior during circle time, and showed these to him at home. After about the third viewing of the tape, Robert said quietly, "No rocking." He still needs occasional reminders, but rocking and flapping behaviors have virtually disappeared.

Social Stories

Social Stories is a teaching tool devised by Carol Gray and various collaborators. It is an approach that uses pictures and words to describe a particular social situation and give the child information about what to do and say. Social stories may be very concrete descriptions of the steps in an activity and may provide a "script" that gives children the words to say. Depending on the skills of the child and the nature of the skill to be learned, they may also be used to teach abstract social concepts such as recognizing emotions and understanding the intentions or perspectives of others.

Jenny is a very active five year old. She is not fearful of social situations. She is verbal, but often doesn't use words to communicate, or uses words that may not be appropriate to the situation. In her kindergarten class, she will often take items that other children are playing with and run away to play with them by herself. This behavior causes other children to become upset, and makes Jenny unpopular. Her teacher has developed social stories that help Jenny to understand why it is important to ask peers to share toys and to take turns playing with them. Here is an example of a social story for Jenny:

Taking Turns with Toys

Sometimes I may want a toy someone else is playing with.

If I take the toy without asking, other children may feel sad or angry.

I can ask to share the toy.

I can wait for my turn to play with it.

Then the other kids will feel happy.

Jenny's teacher draws pictures that go along with each sentence of the story, including sad, angry, and happy faces. Jenny's parents and teacher read the story to her at bedtime and during the school day. Jenny's teacher also uses direct instruction of the skill. They use social praise to reinforce her use of appropriate skills. Gradually, Jenny learns the skill. Next they will work on Jenny's sharing and cooperative play skills.

Activities

Think of a simple social behavior you would like your child to learn. Use the example of Jenny to write your own social story. Keep the steps simple, and illustrations uncluttered. If you are not an artist, you may want to use photographs to represent each part of the story.

For Example

It is important that social skills instruction begin early, and continue throughout your child's school years.

Skill Builder

In Conclusion

The development of age appropriate social skills is an essential component of your child's development and becomes increasingly important as he ages and the social world becomes more complex and demanding. It is important that social skills instruction begin early, and continue throughout your child's school years. Unfortunately, with all the demands schools and teachers face, social skills training may not get the attention it requires. It may be necessary for you to advocate for your child to receive this service. Let's face it, all children can benefit form social skills instruction and it can be incorporated into typical classroom activities and routines. Your child may need some additional instruction, just as some children need additional tutoring to become good at reading or math.

References:

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Churton, M., Cranston-Gingras, A., & Blair, T. (1998). *Teaching children with diverse abilities.* Needham Heights, MA: Allyn & Bacon.

Gray, C. (2000). *The new social stories book*. Arlington, TX: Future Horizons, Inc.

Moyes, R. (2001). *Incorporating social goals in the classroom.* London: Jessica Kingsley Publishers.

> *It is widely believed that many of the disruptive behaviors that children with autism display, such as tantrums, are due to frustration over not being able to communicate what they want.*

The Picture Exchange Communication System-PECS

What is PECS?

The Picture Exchange Communication System (PECS) is a visual communication system that uses small photographs, line drawings, or 3-dimensional objects to represent words. In the PECS process, a child with few or no verbal skills learns that pictures represent objects, actions, or descriptions, and he learns to use these pictures to communicate with others. Typically, the child (or adult) will have a 3-ring binder filled with pictures attached to pages with Velcro® for which he has learned the meanings. The child will then remove the pictures and show them or hand them to the person with whom he wishes to communicate. Many people who learn to exchange pictures for objects (a picture of a swing set is exchanged for going outside and swinging) will be able to learn to build sentences using pictorial representations of verbs and adjectives such as "I see (a) brown dog."   PECS differs from other augmentative devices in that a crucial component in PECS is learning to approach a communication partner with the picture. Too often, this component has not been taught with the use of "talkers" or other electronic augmentative devices and a child might be standing by himself pressing the appropriate button with no communication partner present to help him with his request (Bondy & Frost, 2002).

Definitions

Purpose of PECS

PECS is not intended to replace speech for an individual who has trouble speaking. Instead, it provides a way for a person to communicate as he

develops or improves his verbal skills. People with autism have a specific difficulty making initiations, including verbal and non-verbal initiations as well as seeking attention and joint attention (Fredeen & Koegel, 2006). Furthermore, it is widely believed that many of the disruptive behaviors that children with autism display, such as tantrums, are due to frustration over not being able to communicate what they want (Bondy & Frost, 2002). By using PECS your child will learn to initiate without any prompts so that your child approaches you with a picture of what he wants instead of you responding to his crying by guessing, "Do you want some juice? Cheese? Big Bird?" Since PECS is usually learned very rapidly, many parents and professionals have found an almost immediate reduction in disruptive behaviors after teaching the first phase of PECS (Bondy & Frost, 2002). Many young children can learn to exchange pictures for highly desired items in just a few teaching trials and most within a couple of days (Bondy & Frost, 2002).

Adults will provide a verbal model of the desired item, though an imitation of the model is not required to receive the object. A verbal imitation is not required because some clinicians have found that children who must produce a verbal imitation to gain access to their desired item may begin to avoid using PECS (Bondy & Frost, 2002). PECS is a separate form of communication than speech, not a tool for teaching speech. Teaching PECS and speech as separate skills will promote your child's overall communication development (Bondy & Frost, 2002; Charlop-Christy, Carpenter, Le, LeBlanc, & Kellet, 2002).

Many professionals prefer PECS over sign language for children with autism because it requires gross motor skills (pulling a picture out of a book), not fine motor skills (making signs), which the child may not have the skills to perform. Also, the pictures used in PECS are readily understood by others without any training in the system, allowing siblings, classmates, and community members to understand what the child is attempting to communicate (Bondy & Frost, 2002; Wallin, 2001-2004).

Speech Acquisition and PECS

It is important to note that there is no evidence that teaching your child to communicate via PECS will inhibit her speech acquisition. In fact many anecdotal and case studies support the notion that teaching PECS will increase a child's verbal production (Bondy & Frost, 2002; Charlop-Christy et. al., 2002). A scientific study done in 2002 by Charlop-Christy, Carpenter, Le, LeBlanc and Kellet found that teaching PECS markedly *increased* spontaneous speech, imitative speech, mean length utterances,

and some social skills of three boys with autism. The disruptive behaviors of the three boys decreased as well.

PECS Phases

Andy Bondy and Lori Frost developed PECS and describe the 6-phase system in detail in their book "A Picture's Worth: PECS and Other Visual Communication Strategies in Autism" (2002). Below is a synopsis of each phase.

1. Teaching Initiations

In order to learn initiating for items, your child must be motivated to receive an item! It will be your job to think about what her favorite things are, and use them for the initial teaching phase. Two teachers are necessary in this initial phase: one to be the communication partner who receives the initiation, and one to manually prompt your child from behind (see the section on activity schedules in this manual for more information on manual prompting). In this first phase, the item your child finds most exciting is used to entice her to approach you and initiate for the item. Don't worry if this item is a hot dog or other large food item because you can keep her interest by dividing the item into very small pieces. Have a couple of items ready in case she is not "in the mood" for one of them, but only show one item and its corresponding picture at a time. After she approaches you, the communication partner, and shows interest, the prompter will guide her to pick up a picture of the item and hand it to you. When you receive the picture, you will make a brief verbal comment such as "You want a hot dog!" and then give the child a piece of the desired item. Repeat this process several times and end the session *before* your child gets bored, frustrated, or tired.

For the next session, switch roles or get help from another person so that you become the prompter and she has a new communication partner. This way your child does not learn to approach only one person with requests. The manual prompts should be faded just like they are for activity schedules, and as quickly as possible. Prompting from behind will avoid "prompt dependence," the condition where the child will only initiate when an adult assists her. Keep in mind that the goal is to have her initiate independently. The proper use of the verbal component is very important for avoiding prompt dependence: you must be sure not to give into the temptation of saying "What do want?" or other verbal prompt *before* your child hands you the picture. Providing a verbal prompt before she initiates will *reduce* the chance that she will learn to make initiations

Skill Builder

because she may inadvertently learn that waiting for your verbal cue is part of the routine of requesting objects.

2. Increasing and Generalizing Initiation skills

After your child has learned that picking up a picture and handing it to you results in getting the desired item, you want to begin teaching more pictures in different circumstances and with different people. At this stage you are still showing one picture and one available item at a time. To change the circumstance, you may first start by setting up the pictures a little farther away from the communication partner. Increase this distance as you see successful initiations. Next, move your teaching to another room of the house, and then perhaps outside, at school or a place in the community such as the mall. Increase the number of communication partners as much as possible by enlisting siblings, grandparents, teachers, classmates, and friends with a brief training session that includes how to silently wait until the child approaches him and hands them a picture. In essence, this second phase of PECS slowly builds the required effort that the child must make to initiate.

3. Choosing a message

Now you will begin to present multiple pictures at once and begin keeping the pictures in a binder so that your child can look through them and choose which item he wants. You may begin this phase of teaching with some separate discrete-trial teaching sessions in which you make sure that he is able to discriminate between pictures.

4. Creating "I want" Sentences

In phase four of PECS your child will begin making sentences with additional pictures. The first that is taught is the "I want" picture paired with the desired item.

5. Responding to Questions

By this phase the child should be spontaneously initiating for items using the "I want ____" format. You may notice that this format is appropriate for both initiating and answering some questions. Question answering is not introduced until the 5th learning phase of PECS because initiations are much more difficult to learn if the child is accustomed to waiting for questions before receiving items. Now your child will be taught to make sentences after you ask her a question, beginning with questions that can be answered with the "I want ____" format.

6. Teaching Commenting

Teaching commenting is very different from teaching "I want ____" requests because the consequences to comments do not result in receiving an item, but social attention instead. So when you begin to teach comments such as "I see Big Bird" you do not reward this by giving the child his favorite Big Bird toy. Rather you excitedly say, "Me too! Big Bird is yellow!" Pictures representing "I see" and "I like" will be included in your child's communication book. You can make sure this skill develops in a naturalistic way by teaching your child to comment on things a child would typically comment on such as exciting toys or changes in the environment. Make sure you don't teach comments such as "I see the rug" just because it makes teaching convenient. Your child can eventually learn to use descriptive words as well within PECS.

Conclusion

Often when children begin to use some words parents and teachers stop using PECS altogether. Bondy and Frost (2002), recommend fading out PECS only when 70% or more of an individual's communication is done by speaking. Even then, it is important to fade it out slowly because a child may become very frustrated if he is suddenly not able to communicate in the way to which he has become accustomed.

PECS has been widely researched and additional information is available on the internet, in books, and in professional journals. PECS can also be used as a model for teaching other augmentative systems (Bondy & Frost, 2002).

Definitions

Initiation - Children initiate in many ways including verbally or through use of gestures, and initiate for many things such as joint attention, social attention, or desired items. Researchers may have specific definitions of "initiation" for their research purposes (Fredeen & Koegel, 2006) which include time parameters or type of initiation. However, for this discussion on PECS, we use a broad definition of "initiation" since children may initiate by reaching (gesture) or vocalizing for any number of items or type of attention while using PECS.

Prompt - Anything that gives a cue to someone telling her to engage in a certain activity or give a certain response is a prompt. This includes

Definitions

verbal instructions, manual guidance, photographs, pictures, sounds, and many more. Examples include guiding a child's elbow to help her point to a photograph, or looking at a photograph of a swing set so she knows it's time to go play on the swings. Or hearing the front door open and close might prompt her to go see her brother when he comes home from school.

Prompt Dependence - Prompt dependence is the condition where a child will only perform a certain task when an adult assists her. This occurs when parents and teachers don't fade their prompts effectively, and the child learns that the presence of an adult is part of the skill sequence. The child then assumes that the skill sequence should not take place when the adult is not there. Example: Ms. B. helps Amy put on her coat everyday before recess and going home by laying the coat out on the top of a desk upside down. Amy easily puts her coat on after seeing it laid out on the desk, but never initiates getting her coat from the closet. Amy's coat-putting-on sequence has become dependent on Ms. B's prompt of laying the coat on the desk.

Generalization - When skills taught in one set of circumstances are later displayed under different circumstances, the skill has generalized to the new circumstances. Example: A child says his ABC's at home for his parents, and is then also able to say them at school for his teacher.

Manual Guidance - This is a way of teaching a skill wherein an instructor stands behind the learner and physically guides the child through a skill sequence. The most-to-least prompting system begins with hand-over-hand guidance and prompts are then decreased by the instructor moving her guidance to the elbow, shoulder, shadowing, and decreasing her proximity to the learner. By starting with hand-over-hand guidance, the instructor is preventing the learner from making errors that the child could inadvertently learn as part of the skill set.

Resources

Bondy, A., & Frost, L. (2002). *A picture's worth: PECS and other visual communication strategies in autism*. Bethesda, MD: Woodbine House.

Charlop-Christy, M.H., Carpenter, M., Le, L., LeBlanc, L.A., & Kellet, K. (2002). Using the picture exchange communication system (PECS) with children with autism: Assessment of PECS acquisition, speech, social-communicative behavior and problem behavior. *Journal of Applied Behavior Analysis*, 35(3), 213-231.

Fredeen, R.M., & Koegel, R.L. (2006). The pivotal role of initiation in habilitation. In R.L. Koegel & L.K. Koegel (Eds.), *Pivotal response treatments for autism: Communication, social and academic development* (pp.166-186). Baltimore: Paul H. Brookes.

Wallin, J.M., 2001-2004. PECS. Retrieved 6/26/06 from Polyxo.com *Teaching Children with autism: A resource by Jason M. Wallin*: http://www.polyxo.com/visualsupport/pecs.html

Websites

Please note that website links often change which is why the web addresses provided below are to main pages, not direct links to the pertinent articles. Also included are the names of the organizations so in the event that a main page address is changed, you can still conduct a search for the organization.

Pyramid Educational Consultants: http://www.pecs.com/

The Pyramid Educational Consultants website is the home site for Andy Bondy, Ph.D. and Lori Frost, MS, CCC/SLP, the founders of PECS. This website contains a link to the Charlop-Christy article listed in the resource section, as well as a list of many abstracts for publications on PECS. You can also link to "Products" and find several books on PECS as well as materials for making communication books and other teaching tools.

Polyxo.com Teaching Children with Autism: A resource by Jason M. Wallin: http://www.polyxo.com/

This site has many fine resources as well as information on several behavioral teaching techniques, including PECS. PECS articles can be found under *How Do We Teach?* then click on *Visual Supports* and scroll down to find two articles.

Indiana Resource Center for Autism: http://www.iidc.indiana.edu/irca/

Link to the "IRCA Articles" to find many brief yet useful articles on nearly any topic related to autism intervention. The article on PECS provides an overview of the system.

Notes:

If we can find activities that are genuinely fun for our children, they will see play and physical exercise as something to look forward to each day.

Teaching Play and Physical Exercise

Everyone needs physical activity for good health and children often get this exercise through play activities. Additionally, play activities provide important socialization opportunities and general life enrichment. A child with autism who may not have the skills necessary for playing typical games with other children, or may seem to have little or no interest in play activities, will often miss out on these opportunities unless we explicitly teach play and exercise skills. When we consider the body of research that shows that exercise decreases rates of stereotypic behaviors in individuals with autism (Celiberti, Bobo, Kelly, & Harris, 1997; Kern, Koegel & Dunlap, 1984; Levinson & Reid, 1993) it seems that teaching play and physical activity skills is especially necessary.

It is important for several reasons to involve your child in play activities with her peers who are developing typically. First of all, your child with autism isn't likely to find other children with autism reinforcing since they probably won't respond very much to your child. When you involve your child's non-disabled peers in play activities, your child will be presented with more reinforcement for playing appropriately. Furthermore, typically developing peers can be trained to help your child develop skills (Schreibman, O'Neill, & Koegel, 1983) so they are better able to include your child in play and physical activities.

Your child's typically developing peers will benefit as well. When children without disabilities interact with children who have disabilities they come to realize that such children are as individual and have as much to offer as everyone else, albeit sometimes in a different way! With a small amount of education, your child's peers will begin to value him as a friend.

Children begin to accept your child's unusual behaviors as, "Oh, he just does that sometimes," and they begin to see his wonderful personality like you do. Playing with your child is a gift to other children because it provides them with the opportunity to learn to accept differences in people and see a person for their strengths *first*. For such lucky children, disability becomes something *secondary* that will be accommodated without much thought.

Definitions

You may be wondering at this point how your child is going to participate in games with other children when his skills aren't as developed as those of his peers. You may have to modify the role he plays in games and activities with other children. For example, your child may not yet be able to hit a ball off a tee with bat, but he can catch a ball. Therefore, he may play outfield during a tee-ball game. This is referred to as partial participation, and it allows your child to have opportunities to participate in many aspects of tee-ball including running, catching, and socialization, even if he can't hit the ball. This should not prevent him from learning to hit the ball, however. He may come early to the game to practice hitting with you, a teacher, or another student. He could also practice hitting at home.

Play

If your child begins to receive reinforcement for playing appropriately she can learn to <u>enjoy</u> playing appropriately.

Many parents have observed their child with autism isolating herself when in groups of children. Although she may be using the same toys as her peers, she is likely to use them in a stereotypic way, perhaps squeezing a foam basketball over and over instead of tossing it to a peer. Many children with autism prefer to spin the wheels on toy cars rather than push them along the ground. If your child begins to receive reinforcement for playing appropriately, she can learn to enjoy playing appropriately. Several techniques have been identified and researched that help children with autism learn play activities: Integrated Play Group, Script Fading, Peer Trainers and Models, and Pivotal Response Training (Terpstra, Higgins, & Pierce, 2002). Each of these techniques is reviewed here.

Integrated Play Group

Definitions

In this model of teaching play skills a play group is formed of children who are typically developing and a child with autism. The group meets regularly and the typically developing children should have social skills which are better than that of the child with autism so that they will provide good models of appropriate play. Settings should be naturalistic, and beginning and ending routines established. Play materials used are

of personal interest to the child with autism. Initially adult guidance is used and then faded (see section in this manual on Teaching Activity Schedules for a full explanation of fading adult assistance). The typically developing children in the group receive training in how to interact with the child with autism.

Using Script Fading to Increase Social Interactions

Script training can be used to teach children with autism to socially interact with others. Scripts are sentences that the child imitates after approaching another person. These scripts serve as prompts and can be read from a page card or recorded onto a button-activated voice recorder or similar device, and then said aloud to a conversation partner. After the child is familiar with a script, the last word of the script is taken off of the prompting device (index card or voice recorder). This is the first fading step. Over the next several trials, the scripts are faded again until the prompt is blank. Then the prompt is removed, leaving the natural circumstances to remind the child to talk. As scripts are faded, children will insert different endings onto the prompt, so conversations are not always the same. The research of Krantz and McClannahan (1993) shows that social initiations increase for children with autism when they use scripts and this continues even when scripts are faded.

Definitions

As a parent you will want to consider how you can use scripts to encourage your child to interact with other children everyday. If your child has play time with a friend or sibling you can make scripts to go along with those play activities. For example, Anna, your child with autism, likes to play Nerf basketball with her brother Mark. You can stick two small button-activated voice recorders onto the backboard of the hoop with illustrative photographs attached. One shows a picture of Anna putting the ball into the hoop. The matching script says "I scored!" The other shows Mark putting the ball in the hoop and the script says "Good shot Mark!" Mark can be taught to guide Anna's hand to press the appropriate button during the game. After scripts are completely faded, you record new scripts such as "Two points" or "Slam dunk."

For Example

Peer Trainers and Peer Models

Many parents find it sad to see their child with autism in a group of typically developing children because their child continues to isolate himself. Typical children can be trained to appropriately interact with your child, providing him with opportunities to have his pro-social responses reinforced by a peer (Schreibman, O'Neill, & Koegel, 1983). The research of Baker, Koegel, and Koegel (1998) suggests that you can use your

child's obsessive topics to make him the expert in the eyes of his peers during specially designed games.

Pivotal Response Training (PRT)

Pivotal Response Training is implemented by using naturally occurring items in the environment to teach skills that will help a child's skills develop in other areas (see page 27). Stahmer (1999) lists the steps involved in using PRT to teach play skills. Here is a synopsis of those steps:

1. **Clear instructions and questions:** The activity to be learned is made clear to your child when you give clear, simple instructions, model the activity while you are sure you have her attention, and ask her questions about the toy such as, "What does a train do?"

2. **Interspersal of maintenance tasks:** Maintenance tasks are simply tasks or activities that your child can already perform independently. Have your child do something he knows how to do well every few teaching trials during a new task and you will be giving him additional opportunities to be successful. For example, your son enjoys playing catch and has developed great skills for catching a foam ball. While teaching him to shoot the ball into a basketball hoop, you make sure that you toss the ball back and forth after every couple of attempts to put the ball through the hoop.

3. **Child Choice:** Children with autism show increased motivation when they are allowed to choose their own toys. However, caregivers should still introduce new toys and games to their children. It's important to strike a balance: keep your child interested by letting her make many of the toy choices, and then you take a turn choosing one with which she is not familiar or one for which she needs more practice playing appropriately.

4. **Direct Reinforcement:** If your child pays attention and imitates your model of pushing a toy car and saying "vroom," he has done a wonderful job! Immediately reward him by allowing him to choose the next toy or game or with a highly preferred verbal or physical reward such as cheer ("Sam is the B-E-S-T best!") or toss him in the air. Be careful to choose rewards that are part of typical child play.

5. **Reinforcement of goal-directed attempts:** Even if a child is not completely successful at trying a new play skill, she is reinforced if she approximates models or makes attempts. This will keep her interest level high. Try to reinforce *better* approximations each time to keep her working toward the goal behavior!

6. **Turn taking:** You should take turns as you play with your child so that you continue to model appropriate play skills and you teach him the interaction skill of taking turns.

Physical Exercise

Most of us wish that we got more physical exercise because we know that it's beneficial for our overall health. Perhaps if getting exercise was more enjoyable and more routine we'd be more likely to get the exercise we need. We can help our children with autism learn that exercise is a fun, almost daily part of life. Establishing physical activity as something enjoyable is especially important for children with autism because their tendency to have limited interest inhibits participation in many typical activities. If we can find activities that are genuinely fun for our children, they will see physical exercise as something to look forward to each day.

People with autism may benefit from exercise more significantly than people without autism in two particular ways. First of all, exercise serves to reduce levels of arousal. Often known as the "runner's high" our bodies make chemicals that help us relax when we get aerobic exercise. This state of reduced arousal benefits a child with autism so that when she is faced with, for example, a change in her routine that might make her tense, she is in a better emotional state to handle the change. A body of research also shows that people with autism engage in less stereotypic behavior following vigorous exercise such as jogging (Celiberti, Bobo, Kelly, & Harris, 1997; Kern, Koegel, & Dunlap, 1984; Levinson & Reid, 1993).

There are four major components of fitness: cardiovascular endurance, strength, flexibility, and balance (NCPAD, 2006). It is important to teach your child activities that incorporate each of these components. Also consider if they are using the major muscle groups. If you have a playground near your house this will be quite easy!

Some children with autism will need the teaching environment to be quite structured during initial teaching. You may need to provide clear visual cues such as a photographic activity schedule or footprints taped to the floor for stepping sequences such as *step, step, kick the ball.* A timer can be useful to signal the beginning and end of activities as well. Be sure to vary tasks frequently, just like when you are teaching play activities, and slowly increase the amount of time spent on each activity as your child's skills improve and he finds the activities more rewarding (O'Connor, French, & Henderson, 2000).

Establishing physical activity as something enjoyable is especially important for children with autism because their tendency to have limited interest inhibits participation in many typical activities.

Some children with autism will need the teaching environment to be quite structured during initial teaching.

Your child will enjoy her exercise time more if you incorporate actions that she already enjoys.

Also consider teaching games and exercises that are age-appropriate for your child. Jogging around the block may reduce his stereotypy, but not many four-year olds jog! Instead teach him to ride a big wheel around the block, and then bring him to the park for swinging and monkey bars. As he gets older teach him to ride a tricycle, then a bike. Swimming and rollerblading are activities that are age-appropriate for everyone.

Your child will enjoy her exercise time more if you incorporate actions that she already enjoys. For example, if she loves to bounce on your knee, consider getting a pogo stick, small jogging trampoline, or "moon shoes" which strap onto your child's regular shoes and allows her to bounce as she walks or jumps. If she likes running fast, think of other things that will help her move fast like swings, running and kicking a ball, or the go-round at the playground.

Your community may offer resources you have not yet considered using as teaching locations for your child. If you have a local playground, use it! You may find it helpful to enlist some neighborhood children in helping your child socialize and play on the equipment. They will benefit from the interaction as much as your child and many children have a better understanding of disability and inclusion than adults. Most children love swimming, and children with autism are no exception. See if you have a local YMCA or other center that has a pool. If you have a local park that is fenced in this is the perfect place to practice kicking a ball or jumping rope.

When you find activities that use your child's strengths it will be easier to involve him in activities with other children, enriching his life and the lives of those around him.

At home consider investing in a sprinkler for your child to run through on hot days. This will also provide a great opportunity to invite some other children over since running through a sprinkler doesn't require any special skills and everyone enjoys it. For long winter months and rainy days many exercise videos/DVDs for children are available on the market. Your local library or video store may even have some to borrow so you can try them prior to purchase.

See what physical activities other children who are typically developing are involved in and try to involve your child in the same or similar activities. When you find activities that use your child's strengths it will be easier to involve him in activities with other children, enriching his life and the lives of those around him.

Definitions

Listed below are some definitions that you may find helpful for learning about teaching play and physical activities.

Skills - Skills are any behavior that we learn which help us perform a function. We don't often think about skill development when a child is playing, but many sets of skills are involved that make up play skills: social skills, language skills, fine and gross motor skills.

Reinforcing/Reinforcer - When something is reinforcing, we are more likely to do it again in the future. A reinforcer is anything that is presented during or after a specific behavior that increases the likelihood that we will engage in that behavior again. For example, I visited Judy's house where we had great conversation and coffee cake. I'm very likely to accept future invitations to Judy's house because being at her house is reinforcing for me. When Omar, a child with autism, kicks a ball into the soccer net, his brother shouts "Omar the Great strikes again!" Omar likes to hear his brother shout his name, so Omar tries to kick the ball in the net whenever they play soccer together.

Stereotypic behavior - Also called *stereotypy*, this refers to behaviors that are self-reinforcing and serve no social or biological function.   For example, hand-flapping and toe walking stimulate a child (they may enjoy the feel of it) but it doesn't help them socialize nor does it promote their health or well-being. Learning to stack blocks, however, develops fine motor skills and may help a child play cooperatively with another child.

Resources

Baker, M.J., Koegel, R.L., & Koegel L.K. (1998). Increasing the social behavior of young children with autism using their obsessive behaviors. *The Journal of the Association for Persons with Severe Handicaps*, 23, 300-308.

Celiberti, D.A, Bobo, H.E, Kelly, K.S, & Harris, S.L. (1997). The differential and temporal effects of antecedent exercise on the self-stimulatory behavior of a child with autism. *Research in Developmental Disabilities, 18(2), 139-150.*

Kern, L., Koegel, R.L., & Dunlap, G. (1984). The influence of vigorous versus mild exercise on autistic stereotyped behaviors. *Journal of Autism and Developmental Disorders,* 14(1), 57-67.

Krantz, P.J., & McClannahan, L.E. (1993). Teaching children with autism to initiate to peers: The effects of a script-fading procedure. *Journal of Applied Behavior Analysis*, 26, 121-132.

Levinson, L.J. & Reid, G. (1993). The effects of exercise intensity on the stereotypic behaviors of individuals with autism. *Adapted Physical Activity Quarterly*, 10(3), 255-268.

NCPAD: The national center on physical activity and disability. (2006, June 5). Videos: *Autism and consideration in recreation and physical activity.* Retrieved July 14, 2006 from http://ncpad.org/videos/fact_sheet.php?sheet=366&section=2154

O'Connor, J., French, R., & Henderson, H., (2000). Use of physical activity to improve behavior of children with autism: Two for one benefits. *Palaestra,* 16(3), 1-6.

Schreibman, L., O'Neill, R.E., & Koegel, R.L. (1983). Behavioral training for siblings of autistic children. *Journal of Applied Behavior Analysis,* 16, 129-138.

Terpstra, J.E., Higgins, K., & Pierce, T. (2002). Can I play? Classroom-based interventions for teaching play skills to children with autism. *Focus on Autism and Other Developmental Disabilities*, 17(2), 119-126.

Annotated Bibliography on Training Parents with a Child with Autism

Books and Manuals

Bondy, A. & Frost, L. (2002). *A picture's worth: PECS and other visual communication strategies in autism.* Bethesda, MD: Woodbine House.

> The authors of this book are primary developers of the Picture Exchange Communication System (PECS). Extensive information on PECS and other communication systems is covered here in easy-to-read language.

Frea, W.D., Koegel, L.K., & Koegel, R.L. (1994). *Understanding why problem behaviors occur: A guide for assisting parents in assessing causes of behavior and designing treatment plans.* Santa Barbara: University of California.

> This manual defines and describes different types of problem behaviors including tantrums and self-stimulatory behavior. Learning to identify antecedent behaviors and maintaining consequences are discussed as well as behavioral strategies that focus on how to identify and teach an appropriate competing behavior. It is one of 5 manuals available on Pivotal Response Training (PRT) from the University of California at Santa Barbara.

Harris, S.L., & Weiss, M.J. (1998). *Right from the start.* Bethesda, MD: Woodbine House.

This research-based and clearly written book is designed to give families the information they need about early intensive behavioral treatment to enable them to make good decisions when choosing their child's intervention services. It contains parent testimonials at the end of each chapter, lists some good schools by name and talks about the basics of behavioral treatment. The final chapter, "How to Identify a Quality Program" gives families tools and lists they will need to empower themselves.

Koegel, R.L., & Koegel, L.K. (2006). *Pivotal response treatments for autism* (1st ed.). Baltimore: Paul H. Brookes.

This extremely comprehensive book is interspersed with case examples, facilitating the reader's understanding of the material and providing inspiration. The first chapter defines and outlines the basics of Pivotal Response Training (PRT) which is well-researched intervention technique that uses a developmental approach in conjunction with teaching techniques typically used in Applied Behavior Analysis. PRT stresses family involvement and natural inclusive settings for the treatment of individuals with autism. The chapters are divided among four topic areas: Overview of Pivotal Response Treatment, Development of Communication, Social Development and Reducing Disruptive Behavior, and Broadening Children's Interests.

Koegel, L.K., Koegel, R.L., Bruinsma, Y., Bookman, L., & Fredeen, R. (2003). *Teaching first words to children with autism and communication delays using pivotal response training*. Santa Barbara: University of California

Pivotal Response Training (PRT) is introduced and then applied to case examples of children with autism who are in the early stages of vocal production. Extensively-researched teaching basics within the PRT model such as creating opportunities, clear prompting, reinforcement, and interspersing maintenance and acquisition tasks are included in this manual. The clear, accessible writing in this manual will facilitate its usefulness to parents who are the target audience. The manual has been formatted to include fill-in worksheets and limited type per page which also enhances its user-friendliness.

Koegel, L.K., Koegel, R.L., & Parks, D.R. (1992). *How to teach self-management to people with severe disabilities: A training manual.* Santa Barbara: University of California

Self-management is given as one of the pivotal areas in Pivotal Response Training and this manual outlines how to teach this method to individuals with autism. It includes the tools you will need (e.g. a watch timer or wrist counter) and uses a work-book format to help users organize the information they will need to begin teaching this skill.

Koegel, R.L., Schreibman, L., Good, A., Cerniglia, L, Murphy, C. & Koegel, L.K. (1989). *How to teach pivotal behaviors to children with autism: A training manual*. Santa Barbara: University of California

This manual gives an overview of teaching pivotal responses to children with autism. Many examples are used to illustrate the techniques and define terms which include gaining attention, sharing control, responding to multiple cues, and reinforcing attempts, to name a few. Like most of the other manuals from the University of California at Santa Barbara, this uses a workbook format.

Koegel, L.K., Drazin, D.G., & Carter, C.M. (1998). *A model for parent-professional collaboration*. Santa Barbara: University of California

This manual is especially empowering to families because it will help them define why it is important for them to be involved in their child's intervention services, as well as how they can be involved. This manual will also be of great use to professionals who want to involve families in intervention in meaningful ways.

McClannahan, L.E., & Krantz, P.J., 1999. *Activity schedules for children with autism: Teaching independent behavior*. Bethesda, MD: Woodbine House.

This book is intended for parents who want to learn to use activity schedules with their young children with autism. Topics include how to make activity schedules, how to teach using activity schedules, and how this promotes independent behavior for a child with autism. Also included are sections on troubleshooting and taking data.

Journal Articles

Becker-Cottrill, B., McFarland, J., & Anderson, V. (2003). A model of positive behavioral support for individuals with autism and their families: The family focus process. *Focus on Autism and Other Developmental Disabilities*, 18(2), 110-120.

> This article clearly describes the differences between the expert-driven model of intervention and the ecobehavioral approach which centers on the family's needs. A case study of one family's experience with a service delivery model that used positive behavioral support including an ecobehavioral approach to emphasize the needs of the family is described. Details of assessment, team-building, training and planning with the PATH tool are included. The behavior changes of the subject are described anecdotally and statistically in baseline and one year after treatment, as well as quality of life measures for the subject and the subject's parents. Parents may find this article useful for helping them identify good intervention practices.

Brookman-Frazee, L. (2004). Using parent/clinician partnerships in parent education programs for children with autism. *Journal of Positive Behavior Interventions*, 6(4), 195-213.

> Pivotal response training is evaluated under two conditions: a Partnership model (family-directed) and a Clinician-Directed model. Table 2 illustrates the differences between goals and targeted activities chosen by clinicians and by parents. This article may be useful for research because it shows the relationship between lower parent stress and higher parent confidence to increased child engagement and responding in the Partnership model. Parents may also find the clear writing, graphic data summaries, and definitions of technical terms helpful.

Charlop-Christy, M.H., Carpenter, M., Le, L., LeBlanc, L.A., & Kellet, K. (2002). Using the picture exchange communication system (PECS) with children with autism: Assessment of PECS acquisition, speech, social-communicative behavior and problem behavior. *Journal of Applied Behavior Analysis*, 35 (3), 213-231.

> This study examines the emergence of speech in 3 individuals with autism who are also learning the Picture Exchange Communication

System (PECS). The authors found that verbal speech improved as the PECS was learned and that problem behaviors decreased. This is an important subject for parents and professionals interested in using the PECS model. However, the lengthy article and professional language may make this less user-friendly for parents unfamiliar with professional jargon.

Harris, T.A., Peterson, S.L., Filliben, T.L., Glassberg, M., & Favell, J.E. (1998). Evaluating a more cost-efficient alternative to providing in-home feedback to parents: The use of spousal feedback. *Journal of Applied Behavior Analysis*, 31(1), 131-134.

Like professional staff providing autism intervention services, parents should be provided with feedback and reinforcement so they may improve their performance when teaching their child. Following guidelines such as avoiding interrupting each other and delivering feedback that is positive, immediate, and behavior-specific, spouses learned to give each other feedback which increased the number of correctly implemented teaching performances. This aspect of parent training is seldom mentioned in family intervention literature and should be considered more carefully for inclusion in future family training models.

Kimball, J.W., Kinney, E.M., Taylor, B.A., & Stromer, R. (2003). Lights, camera, action!: Using engaging computer-cued activity schedules. *Teaching Exceptional Children*, 36(1), 40-45.

This article gives readers ideas and resources for making activity schedules using computers so that children with autism can have access to sound and video cues as well as build computer skills. Two case examples are used to illustrate the authors' points in this very accessible article.

Koegel, R.L., Bimbela, A., & Schreibman, L. (1996). Collateral effects of parent training on family interactions. *Journal of Autism and Developmental Disorders*, 26(3), 347-359.

Pivotal response training (PRT) is a naturalistic approach for teaching target behaviors to children with autism and related disorders and this study shows it yields more positive interactions between parent and child than teaching individual target behaviors (ITB). This article

includes a table that describes the differences between PRT and ITB as well as parent affect rating scale. Although the technical language used throughout this article may make it less accessible to many parents, the information supporting the global effects of PRT deserve consideration by researchers.

Koegel, R.L., Glahn, T.J., & Nieminen, G.S. (1978). Generalization of parent-training results. *Journal of Applied Behavior Analysis*, 11(1), 95-109.

Parent teaching skill improvement does not immediately translate to child skill improvement. Parents are able to teach their children more effectively after learning generalized training techniques vs. training on an individual task. Video models are an effective training tool, though they must be behavior-specific and more than one must be viewed. This article may not be very useful for parents since it focuses on specific approaches for professionals to use in parent training. Researchers will want to consider building generalized training techniques into their training models as well as video materials with didactic intent.

Koegel, R.L., Symon, J.B., & Koegel, L.K. (2002). Parent education for families of children with autism living in geographically distant areas. *Journal of Positive Behavior Supports*, 4(2), 88-103.

Parents from 5 different states participated in an intensive short-term (5 day) training program which focused on teaching pivotal response training (PRT). Generalization and maintenance of these skills were shown for up to 1 year following training. Evaluation of effectiveness was based on parent skills as well as child outcomes. Details of each phase of the study are described including pre-intervention, parent education program, post intervention, and follow-up.

Krantz, P.J., MacDuff, M.T., & McClannahan, L.E. (1993). Programming participation in family activities for children with autism: Parents' use of photographic activity schedules. *Journal of Applied Behavior Analysis*, 26(1), 137-138.

Three children with autism showed marked increase in engagement and decrease in disruptive behavior with use of photographic activity schedules in their homes showing the usefulness of photographic

activity schedules for non-readers. Increased social interactions are also reported. The authors only describe materials and teaching conditions briefly, so parents and professionals unfamiliar with activity schedules and graduated guidance will have to look further into the research if they want to implement these procedures as part of their intervention plan.

McEachin, J.J., Smith, T., & Lovaas, O. I. (1993). Long-term outcome for children with autism who received early intensive behavioral treatment. *American Journal on Mental Retardation*, 97(4), 359-372.

Parents may find this article inspiring and motivating since it shows the remarkable difference between children with autism who received intensive behavioral treatment and those who didn't. Pre-school age children with a diagnosis of autism who receive intensive behavioral treatment (which includes extensive parental instruction) are more likely to be placed in least restrictive school placements and make significant IQ score gains. This is a follow-up to a long-term study which evaluates intellectual and adaptive functioning of individuals with autism 5 years after the preliminary study. Professionals may use these results to illustrate the effectiveness of behavioral techniques as effective treatment with long-lasting results.

Markey, U., Markey, D., Quant, B., Santelli, B., & Turnbull, A. (2002). Operation positive change: PBS in an urban context. *Journal of Positive Behavior Interventions*, 4(4), 218-230.

This article highlights the different experiences of families seeking support in suburban and urban communities. A comprehensive support model, Operation Positive Change (OPC) is described including points on workshops, parent data collection, functional assessment, roundtables, support groups, and leadership development. The "training of trainers" model is especially detailed. Also included is a sample Operation Positive Change workshop outline. Parents will find this article useful as a guide to models of support and professionals may find ideas for expanding service models.

Moes, D.R., & Frea, W.D. (2002). Contextualized behavioral support in early intervention for children with autism and their families. *Journal of Autism and Developmental Disorders*, 32(6), 519-533.

Integrating use of contextualized (i.e. individualized) Functional Communication Training (FCT) into daily family routines decreases problem behavior. This supports other research that shows ecobehavioral approaches to intervention for children with autism are more beneficial than expert-driven models.

Neef, N.A. (1995). Pyramidal parent training by peers. *Journal of Applied Behavior Analysis*, 28(3), 333-337.

This replication study looks at the effectiveness of pyramidal parent training. Parents taught by professionals successfully trained peers in targeted teaching behaviors who were then able to successfully train another tier of peers. The professional language used throughout this article will hinder its direct usefulness to parents who are less familiar with behavioral and scientific technical terms. However implications of this study are important for researchers looking for cost-effective ways to disseminate behavioral teaching techniques to parents.

Ruef, M.B., & Turnbull, A.P. (2001). Stakeholder opinions on accessible informational products helpful in building positive, practical solutions to behavioral challenges of individuals with mental retardation and /or autism. *Education and Training in Mental Retardation and Developmental Disabilities*, 36(4), 441-456.

Dissemination of research results can be problematic for several reasons including limited time during workshops and families' frustration when reading professional literature. The preferences of dissemination materials garnered from focus groups comprised of administrators, families, individuals with disabilities, friends, researchers, and teachers are reported. Dissemination recommendations based on these findings are discussed, making this article particularly useful for professionals or researchers concerned with creating dissemination materials.

Santarelli, G., Koegel, R.L., Casas, J.M. & Koegel, L.K. (2001). Culturally diverse families participating in behavior therapy parent education programs for children with developmental disabilities. *Journal of Positive Behavior Interventions*, 3(2) 120-123.

A case history of a Latino boy is presented in this article to illustrate the kinds of individualization strategies that may be necessary when working with a family from a non-Euro-American culture. Although this article will not be accessible to parents whose use of English is limited, it brings up important issues of outreach and modifying services to meet the needs of culturally diverse families for professionals.

Schreibman, L., Kaneko, W.M., & Koegel, R.L. (1991). Positive affect of parents of autistic children: A comparison across two teaching techniques. *Behavior Therapy*, 22, 479-490.

Positive affect of both parents and children are greater during pivotal response training (PRT) than when using individual target behavior (ITB) training. Professionals will find this article useful when they are looking for supportive evidence to implement naturalistic teaching techniques into treatment plans.

Schreibman, L., O'Neill, R.E., & Koegel, R.L. (1983) Behavioral training for siblings of autistic children. *Journal of Applied Behavior Analysis*, 16, 129-138.

Three children, age 8, 11 and 13, were subjects in this study who effectively learned behavioral intervention skills to teach new behaviors to their younger siblings with autism. The implications of this study are meaningful when considering the benefits of an ecobehavioral approach to autism treatment. The siblings in this study are clinician-trained, but parents may still find this article useful. Including siblings in a treatment service plan is worth exploring.

Stahmer, A.C., & Gist, K. (2001). The effects of an accelerated parent education program on technique mastery and child outcome. *Journal of Positive Behavior Interventions*, 3(2), 75-82.

This article explores an accelerated short-term parent training program in the interest of lowering training costs for families. The program taught pivotal response training (PRT), focusing on play and language skills. Half of the participants also received services via a parent information support group. Both groups were able to successfully use PRT, although the participants who also received group support affected more change in their children. Therefore researchers may wish to consider supplementing teaching skills training with informative and socially supportive groups.

Symon, J.B. (2005). Expanding interventions for children with autism: Parents as trainers. *Journal of Positive Behavior Interventions*, 7(3), 159-173.

> After participating in intensive training parents effectively trained other significant care-givers in behavioral teaching techniques which included pivotal response training (PRT). Significant care-givers' and children's success were necessary results for intervention to be labeled effective. These findings support the notion that intervention techniques can be disseminated through the cost-effective means of using professionally trained parents as trainers. This type of dissemination also has implications on global models of intervention since more individuals who regularly interact with a child with autism can be trained to positively impact that child. Although lengthy, parents may be interested in this article for its clear explanation of the study components and the empowering information that they can be effective trainers after seeking training themselves.

Terpstra, J.E., Higgins, K., & Pierce, T. (2002). Can I play? Classroom-based interventions for teaching play skills to children with autism. *Focus on Autism and Other Developmental Disabilities*, 17(2), 119-126.

> Definitions for different types of play are defined in this article before the authors explore several teaching models for play activities: Teaching play skills in isolation, script training, using peer trainers and peer models, group games, and pivotal response training (PRT). Each is briefly and clearly explored, giving readers enough information to judge whether each model is appropriate for them to explore further.

Electronic Resources

Koegel, R.L., Schreffirnan, L., Good, A., Cerniglia, L., Murphy, C., & Koegel, L.K. (n.d.). How to teach pivotal behaviors to children with autism: a training manual. Retrieved Feb. 8, 2006 from Qwest.net Personal Web Page Service Web site: http://www.users.qwest.net/~tbharris/prt. htm#RESPONSIVITY%20TO%20 MULTIPLE%20CUES

> This 22 page manual is intended for a broad audience of people who interact with individuals with autism and other disabilities. It consists of dozens of brief vignettes of children with autism engaging

in challenging behaviors and the following interactions with family members. The authors then comment on the vignettes, pointing out what is good or poor about the family member's behavioral solution. The repetition of the format provides such a great number of intervention strategies that it begins to paint a clear picture for the reader about what types of intervention strategies are helpful and clear to the child with autism. Instead of telling the reader about Pivotal Response Training, this manual shows the reader Pivotal Response Training.

Indiana Resource Center for Autism. (n.d.). Retrieved Feb. 3, 2006 from http://www.iidc.indiana.edu/irca/ftrainpapers.html

The Indiana Resource Center for Autism (IRCA) posts articles intended to disseminate useful and practical information on a wide range of topics to parents of children with autism. The articles range from social and leisure skills to topics on communication, education, as well as issues on health and challenging behavior. Most of the articles are introductions to available resources or a general overview of the topic. Parents may find these articles useful if they want to familiarize themselves with any of the listed topics before delving into professional research or seeking professional consultation.

Rao, P.A., Holtz, K.D., Ziegert, A., & Brown, S. (2003). Life journey through autism: a parent's guide to research. Retrieved Dec. 17, 2005 from Organization for Autism Research website www.researchautism.org

The manual is very user-friendly as it is well organized and indexed, uses accessible language and has a glossary of research terms. The intent of the manual is to help parents understand research literature, though it may also be useful for parents wanting to familiarize themselves with the professional language that service providers use.

The section about searching for professional articles and other resources is comprehensive and includes sections on useful websites, tips for conducting on-line searches using PubMed, SCIRUS, and ERIC databases, and even contains information on contacting individual researchers. The authors walk the reader through the current focus of autism research and how to dissect a journal article. This includes a breakdown of each section of an article and how to cautiously interpret the results. Appendices include sample research articles and worksheets parents can fill out while reading articles that will help them make use of the information.

Vail, T., & Freeman, D. (2002). Employee training manual. Retrieved January 16, 2006 from Mariposa School for Children with Autism website http://mariposaschool.org/programs/.

The link to this 136 page manual is labeled as a parent training manual, however the coversheet clearly states that it is an employee training manual for new therapists at the Mariposa School for Children with Autism in Cary, North Carolina. The manual focuses on teaching verbal behavior which includes instruction on initial vocal productions, transfer procedures, and correction procedures. Sections on reinforcement, behavioral terms and making learning interesting and rewarding for children with autism are clearly written and defined. The technical language used throughout the manual may provide a barrier for most parents, and at times the manual lacks good organization (terms are used that have not yet been defined, no glossary). Additionally, the data collection procedure described within the manual is complex and requires the purchase of a separate book. Many of the described techniques such as teaching picture/object exchange without verbal training are not considered best practice by many professionals so parents should not use this manual without the guidance of a trusted service provider.

The authors are focused on the global approach to treating autism, and encourage parents to be skeptical and use their own common sense when evaluating research and support services. The principle that parents are the foremost expert on their child is stated and reinforced in this manual.

Boardmaker

What is Boardmaker?

Boardmaker is a computer software program that contains symbols and templates for making a huge variety of activity schedules and templates for augmentative and alternative communication devices. Boardmaker symbols can be printed using a number of standardized sizes for use in many different electronic communication devices.

The basic software package available at the time of this writing is offered on the Mayer-Johnson website for $299.00 which includes text in 42 languages. You can import your own photographs and customize symbols and text as well. Boardmaker is available for both Macintosh and Microsoft, and tutorials for both are available on the website.

What Can I Do with Boardmaker?

The following information has been taken from the Boardmaker Idea Book, which is available in a PowerPoint slide show on the Mayer-Johnson website. Calendar templates are available on Boardmaker, making it very easy to make customized calendars. Schedule templates are also available, though you may print pictures to add to your own schedules. You can also make worksheets for reading and handwriting exercises. Templates are available for games such as Bingo and you can make songboards so individuals who are familiar with Boardmaker symbols can follow along with any songs you sing at home or in the classroom. Boardmaker symbols also make great PECS cards once they are laminated. Addendum libraries are available for those wishing to expand their Boardmaker symbol library.

Definitions

Augmentative Communication - These are systems or devices which help a person who has some communication skills improve their communication (Bondy & Frost, 2001). Examples include picture boards or button-activated "talkers" such as Go Talks or Tech/Speaks.

Alternative Communication - These are systems or devices intended to replace speech. Examples include American Sign Language or switch-activated devices that may be operated by different body movements such as eye gaze or button-pressing (Bondy & Frost, 2001).

Definitions

Resources

Mayer-Johnson Website: http://www.mayer-johnson.com

This website has tutorials as well as a PowerPoint presentation of "The Boardmaker Idea Book." You can purchase software, see examples, and purchase electronic communication devices. Click on "Tips and Tricks" from the homepage to find tutorials and PowerPoint presentations.

THE ELIZABETH M. BOGGS CENTER
ON DEVELOPMENTAL DISABILITIES

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