Welcome to the Jenison Autism Journal Winter 2002 Issue

- Carol Gray, Editor

The Jenison Autism Journal is thrilled to have this opportunity to introduce our readers to the *SCERTS Model* (pronounced *serts*), a multidisciplinary educational and treatment model for children with Autism Spectrum Disorders (ASD). *SCERTS* is an acronym for Social Communication (SC), Emotional Regulation (ER), and Transactional Support (TS); promoting social communication and emotional competence in naturally occurring contexts while building meaning into daily experiences. Recognizing that the daily activities of a young child revolve around his/her family and home, the SCERTS Model provides families and professionals with the tools and support they need to build on a child's abilities and emerging concepts and skills.

The Rocky Mountains provided the backdrop for a summer 2002 retreat for the authors of the SCERTS Model, pictured left to right: Patrick Rydell, Ed.D., CCC-SLP, Amy Laurent, OTR-L, Amy Wetherby, Ph.D., CCC-SLP, Emily Rubin, MS, CCC-SLP, and Barry Prizant, Ph. D., CCC-SLP.

As I reviewed the articles in this issue, I was impressed by the authors' expertise and genuine respect for children with ASD and their families. Developed by a team, the SCERTS Model thrives on the teamwork, shared control, and strengths of the child with ASD, his/her family, and professionals. In this way, the SCERTS Model is a dynamic demonstration of *respect-in-practice;* a research-based foundation that never loses its footing as it is translated into strategies, activities, and support. To put it another way, SCERTS is *sincere* – the *thoughts* behind it *match the words* used to share it with others, which in turn *match how it looks and feels* to children with ASD and those working on their behalf. Like a solid foundation to a house, this is a framework that comfortably builds meaning, logic, and predictability into daily interaction for *all* parties. Thus, within the walls of the SCERTS Model there is an opportunity for learning and the establishment of social and emotional connections.

Recently, I went to see *The Emperor's Club.* A phrase in the movie captured my attention*: the beginning determines the end.* Historically, the field of autism has known numerous beginnings; a series of methodologies among which only a few have stood the tough test of time and practice. We've known many beginnings that ultimately unravel into loose and disappointing endings. It is intriguing, though, to consider what we might do if we had *one great beginning.* Where would we invest the saved time and resources? What new concepts, strategies, and details could be developed within a "building" designed for the long haul? The better the foundation, the *easier* it is to install electrical wiring, hang wallpaper, or install carpet; and the *more fun* it is to arrange furniture, hang pictures, and *live and grow there.* Imagine the possibilities… "You mean we can *stay here* this time? We don't have to pack up and move again?"

That being said, it's important to understand that the SCERTS Model is not the house; it's the blueprint. After all, people live and grow most effectively among their own choice of colors, furniture, and activities; and they digest and translate new concepts in light of their own values, beliefs, talents, skills and experiences. To those of us working on behalf of children with ASD, SCERTS is a flexible, focused, and carefully tailored beginning that may eliminate the need for subsequent starts.

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THE SCERTS MODEL:
Enhancing Communication and Socioemotional Abilities of Children with Autism Spectrum Disorder

"The SCERTS Model is thorough, tailored, and focused on the core deficits in ASD. It raises the bar, creating a workable and effective standard. It's exciting to see sound research and theory translated into a practical framework for intervention." – Carol Gray

The SCERTS Model in Action:

Pictured above are (left to right), Danny, Jeffrey (both running) and Patrick (jumping on the trampoline), as they participate in a social skills group.

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WHAT IS THE SCERTS MODEL?

The SCERTS Model is a comprehensive, multidisciplinary approach to enhancing communication and socioemotional abilities of young children with Autism Spectrum Disorders (ASD). The acronym "SCERTS" refers to Social Communication (SC), Emotional Regulation (ER) and Transactional Support (TS), which we believe are the primary developmental dimensions to be prioritized in a program designed to support the development of children with ASD and their families. In the SCERTS Model, it is recognized that the most meaningful learning experiences in childhood occur in everyday activities within the family and school contexts. Therefore, efforts to support a child's development should occur with a variety of partners (e.g., parents, other caregivers, brothers and sisters and other children) in everyday routines in a variety of social situations,

and not primarily by working with children or "training skills" outside of these natural and more motivating contexts.

The SCERTS framework has been designed to target priority goals in social communication (SC) and emotional regulation (ER) by implementing transactional supports (TS) throughout a child's daily activities and across social partners. By supporting a child's development in social communication and emotional regulation, with the strategic implementation of transactional supports, there is great potential for meaningful developmental progress for a child and his or her family in daily activities. The SCERTS Model is best implemented as a multidisciplinary approach that respects and infuses expertise from a variety of disciplines, including regular and special education, speech-language pathology, occupational therapy, psychology, and social work. An effective program for a child with ASD based on the SCERTS Model requires the expertise of a team of professionals working in a carefully coordinated manner and in a collaborative partnership with parents and family members.

In this article, we will provide an overview of the philosophical foundations, values and guiding principles, and core components of the SCERTS Model, and discuss what the SCERTS Model is and is not. We will conclude by demonstrating how the model has been implemented for a young child with ASD. In our efforts to share the Model with professionals and families, we currently are writing a practical, comprehensive manual to help guide the efforts of educators, clinicians and families in supporting the development of children with ASD, from early intervention through the early school years. The SCERTS Model is designed to have broad application, and thus can be applied in educational, clinical settings and in everyday activities at home and in the community. For ease of communication, we will use the term "educational" throughout this discussion to refer to all efforts to support the development of children with ASD, with the understanding that such efforts are not limited to educational settings, nor solely to educators as facilitators of positive change.

CORE COMPONENTS OF THE SCERTS MODEL

The core components of the SCERTS Model are Social Communication, Emotional Regulation and Transactional Support.

Social Communication

If all my possessions were
taken from me with one exception,
I would choose to keep the power
of communication, for by it, I would
soon regain all the rest.

- Daniel Webster

You can't not communicate.
Everything you say and
do or don't say and don't do
sends a message to others.

- John Woods

The social communication component of the SCERTS Model addresses the over-riding goals of helping a child to be an increasingly competent and confident communicator, and active participant and partner in social activities. This includes communicating and playing with others in everyday activities and deriving joy and pleasure in social relationships with children and adults. In addressing this goal, we believe children must acquire capacities in two major areas of social-communicative functioning: *joint attention abilities* and *symbolic behavior*. These two foundations of social communication underlie functional abilities in a variety of ways. First, with increasing capacities in joint attention, children become more able to share attention, share emotions, as well as express intentions with social partners in reciprocal interactions. Next, with increasing capacities in symbolic behavior, children develop more sophisticated and abstract means to communicate and play with others. One aspect of symbolic behavior is the means that children use to communicate or "how" children communicate, also referred to as *communicative means*.

Communicative means may be preverbal (primarily presymbolic) such as use of gestures or use of objects to communicate, or verbal (primarily symbolic), including signs, picture symbol systems and/or speech ranging in sophistication from single word utterances to complex expressive language used in conversation. Although the ultimate goal is to help youngsters develop and use effective and efficient means to communicate symbolically in one primary modality, *multi-modal communication* is valued and targeted in the SCERTS Model. Children are more effective communicators when they have a variety of strategies, so that if one strategy does not work (e.g., speech), a child may shift to another (e.g., pictures or gestures). In fact, a high level of *communicative competence* is defined, in part, by the degree of flexibility a child has available in the means used to communicate, including the ability to coordinate various means such as words and gestures, or pictures and vocalizations, rather than having to rely on only one way to communicate.

Capacities in joint attention enable children to attend and respond to the social overtures of others and, ultimately, to become a partner in the complex "dance" of *reciprocal social communication*. At more advanced levels of ability, the capacity for joint attention supports true social conversation by fostering a child's awareness of a social partner's attentional focus, knowledge, and preferences. This capacity supports the ability to share experiences about past and future events, to maintain relevance to the topic being discussed, to provide sufficient background information, and to consider a listener's perspective and interest. We also believe that children are more competent communicators when they are able to communicate for a variety of purposes or functions in everyday activities, such as expressing needs, sharing observations and experiences, expressing emotions and engaging others in social interactions. Children who communicate for a limited range of functions (e.g., primarily for requesting and labeling), are less socially engaging and less desirable social partners. Unfortunately, some "speech-training" programs for children with ASD tend to focus on such a narrow range of functions.

With increasing abilities in social communication, a child is better able to participate with shared attention in emotionally satisfying social interactions, which are the foundation for developing relationships with children and caregivers. Research and clinical experience have demonstrated that with increased social communication abilities, behavioral difficulties may be prevented or lessened. Put simply, if a child has socially acceptable nonverbal or verbal means to make choices, to protest, and to get attention, there is less of a need to express strong emotions or attempt to exert social control through socially unacceptable means.

Social communication and language abilities also are essential for learning in educational settings and everyday activities, and have broad-ranging effects on a child's social and cognitive understanding of daily experiences and growing sense of competence and self-esteem. The great majority of opportunities for learning in childhood is mediated through symbolic activities such as language use and pretend play, as well as through nonverbal communication; therefore, the more competent a child is in language and communication abilities and symbolic play, the more opportunities that child will have for benefiting from learning experiences.

The ultimate goal of the SC component of the SCERTS Model is to support children in developing the foundational abilities in joint attention and symbolic behavior that support communicative and social competence, and emotional well-being. With these abilities, a child is more likely to find satisfaction and even great joy in being with, relating to, and learning from family members. Other children and caregivers thereby further increase motivation to socialize and seek out learning opportunities. Table 1 provides some examples of generic goals for children in social communication organized in three general developmental stages – Intentional Communication (Social Partner Stage), Emerging and Early Language Levels (Language Partner Stage), and Conversational Levels of ability (Conversational Partner Stage).

Table 1. SCERTS Model: Examples of Social Communication Goals*
(* actual goals will vary depending on child's needs and family priorities)

Intentional Communication Level (Social Partner Stage)

Goals for Joint Attention and Reciprocity	Goals for Symbol Use
• Establish shared attention (e.g., orienting to social stimuli including speech, social referencing through gaze shifting, gaze/point following).	• Establish use of contact gestures to express intent (e.g., pulling another's hand to an object, giving an object, pushing away an object, showing an object).
• Establish shared affect (e.g., smiling and looking).	• Establish general use of vocalizations directed to others to express intentions and emotional states.
• Establish early intentional behaviors for the function of behavioral regulation (i.e., to have needs met, such as requesting or protesting by coordinating gestures and vocalizations with physical contact or gaze).	• Establish repertoire of conventional, distal gestures (e.g., reaching, raising arms, waving, pointing, clapping, shaking and nodding head).
• Increase frequency or rate of communicative initiations.	• Replace undesirable communicative means (e.g., aggression, tantrum, or self-injury) with socially acceptable forms.
• Develop the use of communication for social interaction functions (I.e., to draw attention to self such as pulling hand to request a tickle, reaching to request comfort, waving to greet).	• Establish repertoire of varied vowels and consonant + vowel combinations used as part of communicative acts.
• Develop the use of communication for joint attention functions (i.e., to draw attention to objects or events of interest such as showing an object to comment, clapping after building a tower of blocks, pointing to label).	• Develop the coordination of gestural and vocal means (e.g., a conventional gesture plus a vocalization).
• Develop strategies to persist and repair communicative breakdowns by repeating or modifying message.	• Establish functional use of familiar objects directed toward self (e.g., feed self food with spoon).
• Develop ability to communicate intentions across familiar persons, environments, and activities.	• Expand repertoire of communicative means to build repair strategies.
	• Establish comprehension and anticipation of familiar routines based on situational and nonverbal cues and visual supports, including language embedded in such routines (action, object terms, person names).

Table (cont)

Emerging and Early Multi-word Levels (Language Partner Stage)

Goals for Joint Attention and Reciprocity	Goals for Symbol Use
• Expand ability to communicate intent across more varied persons, environments, and activities. • Expand ability to coordinate attention and affect through shifting gaze and shared affect. • Develop ability to secure attention to oneself prior to expressing intentions (e.g., verbal calling). • Continue to expand range of communicative functions to include more social purposes (e.g., greeting, showing off, commenting). • Establish ability to coordinate shared attention, affect and intention to share experiences. • Increase reciprocity in speaker and listener roles (i.e., turn-taking and contingent use of language) to share experiences. • Establish ability to ask questions to seek new information about things of interest (e.g., "What's that?"). • Establish use of pronouns to correspond with speaker/listener (I/you) roles. • Develop strategies to persist and repair communicative breakdowns by repeating or modifying message, requesting clarification.	• Establish quasi-symbolic and symbolic means of communication (spoken words, signs, and/or picture symbols/photos). • Establish ability to produce intelligible or unambiguous communicative acts (e.g., spoken word, sign, point to picture). • Establish conventional use of familiar objects directed toward self in play (e.g., feed self with spoon without food). • Acquire core single word vocabulary that is decontextualized and expresses early semantic functions (e.g., objects, actions, location, nonexistence, recurrence, rejection). • Expand vocabulary to express a variety of semantic relations (e.g., agent, action, attribute, possession, location, emotion) to describe states, qualities, and relations of objects and events. • Establish conventional use of familiar objects directed toward others in play (e.g., feed doll). • Establish use of novel word combinations (or signs/pictures) to express semantic relationships (e.g., action + object, attribute + object, agent + action). • Establish planned logical sequences of actions in play (e.g., prepare food; feed stuffed animal). • Establish more conventional use of repetition to express intentions, with eventual segmentation of gestalt forms, moving to creative utterances. • Establish use of grammatical morphemes (e.g., prepositions, plurals, tense markers) and simple sentence constructions (i.e., negatives, declaratives, imperatives, and interrogatives). • Expand representational play themes that involve make-believe roles with realistic or miniature toys. • Develop emergent literacy skills.

Table (cont)

Sentence and Discourse Levels (Conversational Partner Stage)

Goals for Joint Attention and Reciprocity	Goals for Symbol Use
• Knowledge of communicative events, and use of "scripts" specific to particular events.	• Acquire higher level grammatical forms that express differences in meaning (e.g., subordinate clauses and conjunctions).
• Increase ability to share experiences by introducing topics about past and future events providing sufficient information for the listener.	• Acquisition and use of verbal conventions for initiating, exchanging turns, and terminating interactions (opening conversations, etc.).
• Use of nonverbal and paralinguistic behavior to support social interactions (e.g., body posture and orientation, eye contact, prosody, vocal volume).	• Increase ability to interpret and use language flexibly depending upon the social context and the nonverbal cues of one's communicative partner (e.g., drawing inferences, multiple meaning words, politeness, nonliteral language, and sarcasm).
• Acquisition of nonverbal conventions for initiating, exchanging turns, and terminating interactions.	• Increase ability to use language over multiple turns and in more complex discourse (e.g., telling and understanding stories, sharing information about multiple events that occur over time).
• Facilitate awareness of another's intentions, preferences, and experiences (Theory of Mind).	• Acquire ability to use language as a tool for emotional regulation: a) develop vocabulary to express emotions and share experiences with others; b) use language to prepare for changes in routine; c) discuss potentially problematic emotionally dysregulating situations; and d) use language to request assistance and comfort.
• Develop ability to maintain and or modify topic selections based on a listener's attentional focus, prior knowledge, preferences, and emotional state.	• Use of reading and writing skills for intrapersonal and interpersonal communicative functions.
• Use of language to negotiate and resolve differences of opinion or conflicts.	• Increase ability to engage in sociodramatic play and higher level social play.
• Increase understanding of social rules and conventions in different situations (rules of games, social requirements of different events, classroom rules).	
• Use of language to express feelings and empathy.	
• Expand strategies to persist and repair communicative breakdowns by repeating or modifying message, stating lack of knowledge ("I don't know"), asking for more information, requesting clarification.	

(adapted from Prizant, Wetherby, Rubin & Laurent, in press; Prizant, Wetherby, Rubin, Laurent & Rydell, in progress)

Emotional Regulation

Our emotions decide what is worth paying attention to... emotions are constantly regulating what we experience as reality.

- Candace Pert (1997)

In order for children to have the maximum capacity to learn, they have to be able to manage their emotions.

- Daniel Goleman

Emotional regulatory capacities enable a child to be organized and focused, to problem solve, to communicate, to maintain social engagement, and to be "available" for learning.

- Prizant, Wetherby, Rubin and Laurent (2001)

The Emotional Regulation component of the SCERTS Model focuses on supporting a child's ability to regulate *emotional arousal*. Emotional regulation is an essential and core underlying capacity that supports a child's "availability" for learning. A child is most available for learning when he/she is better able to:

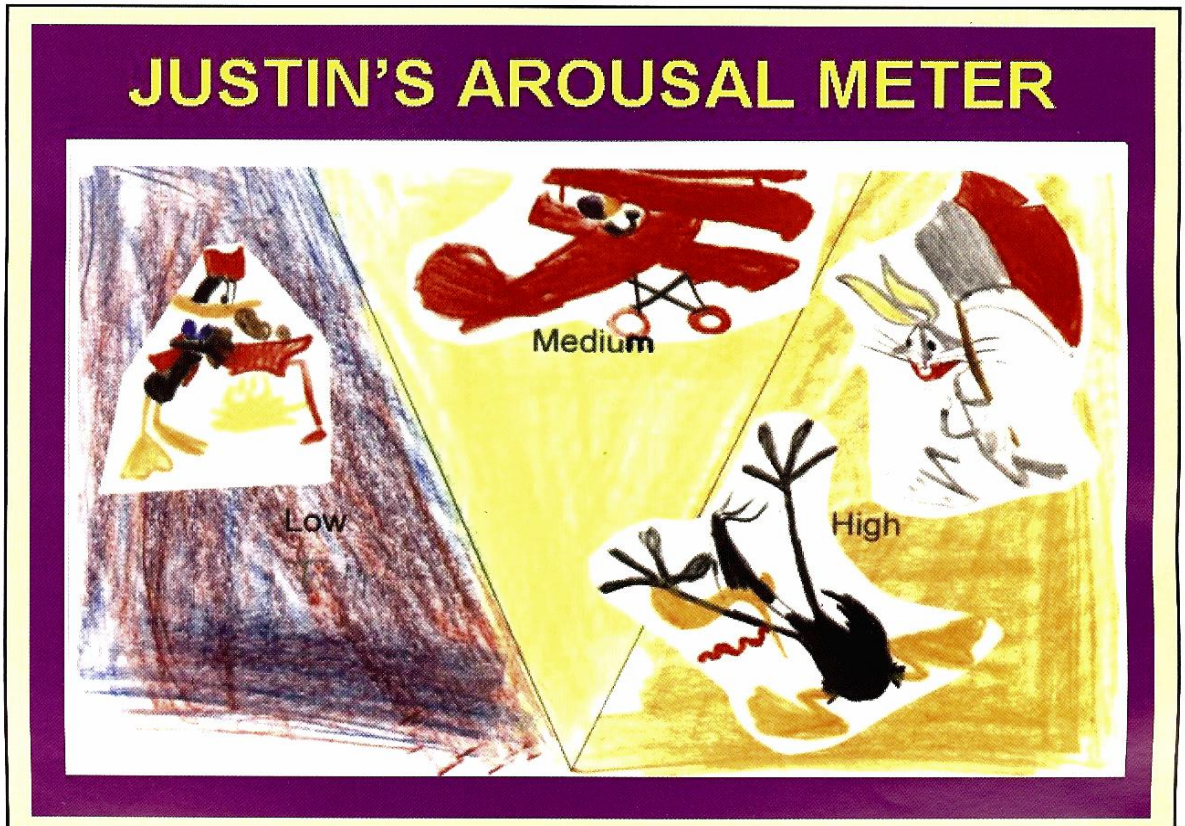
1) attend to and maintain focus on the most relevant information in an activity or setting;
2) process verbal and nonverbal information;
3) remain socially engaged with others;
4) initiate interactions using higher level abilities including language;
5) respond to others in reciprocal interaction; and
6) actively participate in everyday activities.

For a child to be optimally "available", he/she must have the emotional regulatory capacities and skills:

1) to independently remain organized in the face of potentially stressful events which may be either positive or negative in nature (referred to as *self-regulation*),
2) to seek assistance and/or respond to others' attempts to provide support for emotional regulation when faced with stressful, overly stimulating or emotionally dysregulating circumstances (referred to as *mutual regulation*),
3) to "recover" from states of *emotional dysregulation* or "*attentional shutdown*", through self and/or mutual regulation strategies (referred to as *recovery from dysregulation*).

Enhancing capacities for emotional regulation goes hand-in-hand with helping a child to more effectively maintain "*optimal arousal*", so that the child is not experiencing predominant patterns of arousal of being too "high" or too "low" with regards to the social and physical environment, or fluctuating too frequently between such extreme states of arousal. Children who experience such fluctuations and extremes, especially frequent "too high" states, are often at the mercy of overwhelming reactions such as anxiety, fear, distress, or even dysregulating positive emotional states of elation and giddiness. Such children may appear to be hyperreactive, hypervigilant or always "on guard". Children who are often too "high" may also withdraw or "shut down" as an attempt to cope with disorganizing or overly stimulating experiences. In contrast, children who have a bias towards being in a low state of arousal often have difficulty attending to the salient features of their environment and sustaining attention for social interactions and educational activities. These children may appear unmotivated, passive, disengaged, and inattentive.

Many factors may be the source of dysregulation: cognitive, physical, sensory, motor, interpersonal or social. Cognitive factors may include language processing difficulties, memories of negative emotional experience associated with an activity or place, violations of expectations, or an extreme need to have events occur in a particular sequence or manner. Physical factors may include health status such as effects of allergies, gastrointestinal problems, and so forth. Sensory factors may include a hyper reactive response bias to sensory input, which may include auditory, visual, tactile or olfactory stimuli. Motor factors may include motor coordination and motor planning difficulties impeding goal directed behavior, and resulting in frustration. Interpersonal factors may include



Pictured above: *This arousal meter was drawn by eleven year old Justin, who used his own interpretations of "too low" (i.e. Daffy Duck engaged in the monotonous and repetitive task of making French fries), "just right" (i.e. Daffy flying an airplane), and "too high" (i.e. Daffy being chased by Bugs Bunny with a cleaver) to identify his current state of emotional arousal, subsequently self-identifying socially appropriate coping strategies for maintaining his availability for learning and social engagement. The unique qualities of this tool illustrate the individualized nature of transactional supports for emotional regulation. Tools that are meaningful and motivating for a specific child will likely be the most effective. For more of Justin's art, go to www.justinart.com.*

partners who do not read or who misread a child's signals of dysregulation, and who, therefore, are not able to respond in a supportive manner. Social factors may include social activities and social environments that are confusing and anxiety arousing.

Therefore, the ultimate goal of the ER component of the SCERTS Model is to support a child in adapting to and coping with the inevitable and uniquely individual daily challenges he/she will face in maintaining optimal states of arousal most conducive to learning, relating to others, and experiencing positive emotions. Table 2 provides some examples of generic goals for children in emotional regulation organized in reference to self- and mutual regulation goals, at two different levels: Sensory Motor (presymbolic) and Cognitive-Linguistic (symbolic).

Table 2. SCERTS Model: Examples of Emotional Regulation Goals*
(* actual goals will vary depending on child's needs and family priorities)

Goals for Self Regulation	Goals for Mutual Regulation
Sensory-motor/Prelinguistic Level Goals	
• Increase child's ability to acquire and use socially acceptable sensory-motor strategies to support engagement and attention in daily activities.	• Increase child's ability to maintain engagement and attention to activities by responding to behavioral signs of dysregulation (e.g., decrease the amount of environmental stimulation when a child exhibits "fright and flight" reactions; increase the amount/intensity of stimulation imbedded in activities when a child appears hypo-responsive to the environment).
• For a child who is typically in a low state of arousal, expand his/her repertoire of alerting strategies - jumping, movement-based song routines, etc.; for a child who is typically in a high state of arousal, expand his/her repertoire of calming strategies - holding favorite object, rhythmic motion, movement activities.	• Increase child's ability to use socially acceptable gestures for social control functions requesting and protesting (e.g., head nod, head shake, push away, point, etc.).
• Expand the child's use of sensory-motor strategies to support transitions within daily routines (e.g., use of transition objects, imbed organizing sensory-motor supports within transition activities).	• Develop strategies through non-speech transactional supports to assist the child with expression of arousal and emotional state (e.g., visual supports).
Cognitive/Linguistic Level Goals	
• Increase the child's ability to acquire and utilize cognitive-linguistic strategies to support his/her attention to activities and daily routines (e.g., through the use of rehearsal and self-regulatory language, by reference to visual supports).	• Increase the child's acquisition of vocabulary to be able to request assistance and organizing supports when he/she experiences dysregulating events (e.g., requesting "help", a break from an activity).
• Expand the child's use of cognitive-linguistic strategies to support independent transitions throughout daily routines (e.g., introduce picture/written word schedules to symbolize activity sequence and transitions, Increase the child's awareness of temporal concepts, etc.).	• Increase the child's ability to use specific vocabulary to express emotional state and arousal level.
	• Increase ability to identify and express emotional state and arousal level, as well as use regulating strategies with and without the use of visual supports (e.g., emotion meters).
	• Increase social understanding and social expectations through language-based strategies such as Social Stories.

Transactional Support

In order to feel real, we all need to be recognized and affirmed. We need to be accepted and appreciated. Most of all, we need to be seen with loving eyes, and reflected back with warmth and enthusiasm... as much as we need oxygen and food.

Stephen Cope (1999)

Transactional support is the third and final core component of the SCERTS Model. Since most meaningful learning occurs within the social context of everyday activities and within trusting relationships, transactional support needs to be infused across activities and social partners. Transactional supports include the following:

1) ***Interpersonal supports*** - These include the adjustments made by communicative partners in language use, emotional expression and interactive style that are effective in helping a child with ASD process language, participate in social interaction, experience social activities as emotionally satisfying, and maintain well-regulated states. Interpersonal support also includes peer support, which provides a child with positive experiences with children who are responsive partners and who provide good language, social, and play models, leading to the development of positive relationships and friendships.

2) ***Learning and educational supports*** - These include *environmental arrangement*, or the ways typical settings and activities are set up or modified to foster social communication and emotional regulation; *visual supports* for social communication and emotional regulation, which may be implemented in educational settings as well as in everyday activities, and *curriculum modifications and adaptations* to support success in learning.

3) ***Support to families*** - This includes *educational support* such as the sharing of helpful information and resources, or direct instruction in facilitating a child's social communication, emotional regulation, daily living skills, and implementing learning supports. When appropriate, *emotional support* to family members also is provided to enhance skills for coping and adaptation to the challenges of raising a child with ASD.

4) ***Support among professionals and other service providers*** – This includes informal and planned opportunities for enhancing educational and therapeutic skills, and for providing emotional support, whenever necessary, to cope with the challenges of working with children with ASD, and to prevent "burn-out".

In summary, the ultimate goals of the TS component of the SCERTS Model are to coordinate efforts among all partners in using interpersonal supports most conducive to social communication and emotional regulation, to provide learning experiences with other children leading to the development of meaningful peer relationships, and to provide the necessary learning and educational supports. Additionally, families must be supported with educational resources and emotional support. Professionals and other service providers need to be supported through professional growth opportunities, as well as opportunities to support each other emotionally. In the SCERTS Model it is recognized that, when professionals and other caregivers begin to work with a child with ASD and with each other, they enter into complex, dynamic and transactional relationships with the child, parents, and other caregivers and service providers. Important qualities of all these relationships that must be nurtured include trust, respect, and empowerment for the child and family to be competent and independent. Furthermore, these relationships must change and evolve over time, as children grow and develop, and as parents become more knowledgeable about ASD, more confident in supporting their child's development, and more clear about their priorities for both the child and the family. As parents and family needs change, professionals must be flexible, responsive, and respectful of family decisions. Table 3 provides some examples of transactional support goals for children, their families and for professionals.

Table 3. SCERTS Model - Examples of Transactional Support Goals*
*(actual goals will vary depending on child's needs and family priorities)

I. Interpersonal Support

A. Identify specific features of communicative partners' interactive styles and language use that either support, or are barriers to successful interactions (e.g., expression of emotion, language complexity and style, vocal volume, rate, physical proximity, physical contact, use of visual supports). An optimal style is one that: a) provides enough structure to support a child's attentional focus, situational understanding, emotional regulation, and positive emotional experience, and b) fosters initiation, spontaneity, flexibility and self-determination.

B. Coordinate efforts across different partners in developing strategies to increase those specific features that support more successful interaction, and modify those that are barriers.

C. Design and implement learning experiences with peers so that the child with ASD may benefit optimally from good language, social and play models. Design motivating activities, organize supportive environments, and incorporate visual supports. Teach both typical children and children with ASD specific strategies for success in daily interactions.

II. Learning and Educational Supports

A. Design and implement visual and organizational supports to:

1. Expand and enhance the development of a child's expressive communication system, either as a primary modality or as an augmentative system that is one part of a child's multi-modal communication system;
2. Support a child's understanding of language as well as nonverbal behavior;
3. Support a child's sense of organization, activity structure and understanding of time; and
4. Support the development and use of cognitive-linguistic emotional regulatory strategies.
5. Adapt and/or modify curriculum goals that are primarily language-based to enable the child to succeed to the extent possible.

B. Design living and learning environments to support social communication and emotional regulation (physical structure, level of auditory and visual stimulation, etc.).

III. Family Support (i.e., support to parents, siblings, extended family members)

A. Provide families with educational support including information, knowledge and skills to understand the nature of their child's disability and to support their child's development. Support must be based on family priorities, and offered through a variety of options such as educational activities (e.g., lectures, discussion groups), direct training of skills, observation of educational programming, and interactive guidance and modeling in natural activities.

B. Provide emotional support in one-to-one and group settings to: (a) enhance family members' abilities to cope with the stresses and challenges of raising a child with ASD; and (b) help parents to identify their priorities, and develop appropriate expectations and realistic, achievable goals for their child's development and for family life.

Table (cont)

IV. Support among professionals and other service providers

A. Provide informal and planned opportunities for enhancing educational and therapeutic skills through mentoring arrangements, sufficient planning time, regular staff in-service trainings, and by attending conferences.
B. Provide informal and planned opportunities for emotional support, whenever necessary, to cope with the challenges of working with children with ASD, and to preclude "burn-out". This may include retreats, support meetings, daily "sharing" opportunities.

(adapted from Prizant, Wetherby, Rubin & Laurent, in press; Prizant, Wetherby, Rubin, Rydell, & Laurent, in progress)

The Whole is Greater than the Sum of the Parts

Although we have just discussed SC, ER and TS as separate entities, they are by no means mutually exclusive in theory, in how children develop, or in educational practice. Unlike the typical separation of developmental domains in an IEP, one of the unique characteristics of the SCERTS Model is recognition of and respect for interdependencies among various aspects of development in children. Here are but a few brief examples we have observed repeatedly in youngsters we have known:

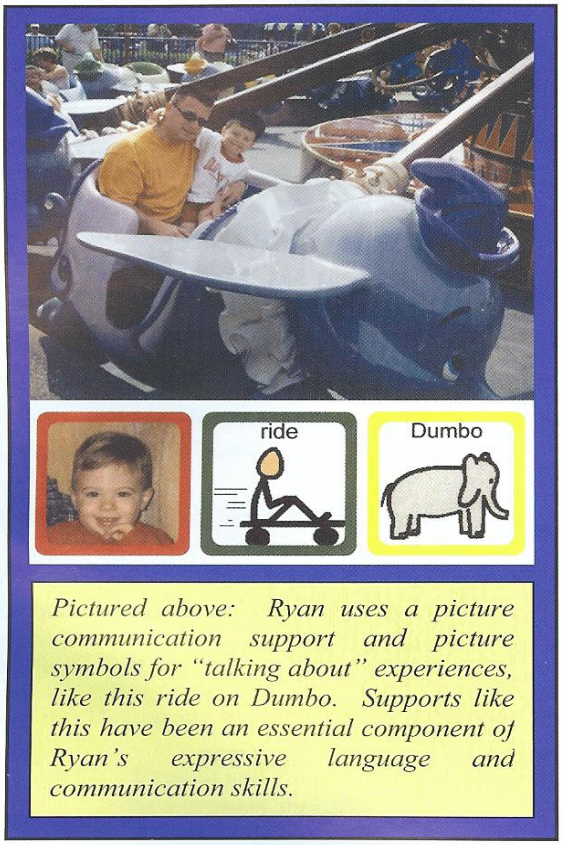
1) Increased abilities in social communication prevent or lessen behavioral difficulties. This occurs because social communicative abilities allow children to seek assistance from others (e.g., requesting help), to express emotions (e.g., communicating anger or fear) and to have social control in socially acceptable ways (e.g., choosing activities). Thus, by communicating in these ways, a child's emotional regulation is supported.

2) When communicative partners sensitively adjust levels of language and social stimulation (interpersonal transactional support), or use visual supports in daily activities (educational transactional support), a child's ability to process and respond to language (social communication) and to stay engaged in a social activity with focused attention (emotional regulation) is enhanced.

3) If a student is given opportunities to engage in organizing or regulating movement activities (emotional regulation), and is provided with a visual schedule (transactional support) to clarify the transition from a school bus to the classroom in the morning, the student is more likely to be able to participate successfully in social classroom activities (social communication) rather than needing more "settle-in" time.

Why Focus on SC, ER and TS?

One may ask, *"What is the justification for focusing on these particular areas, or any other areas of development for children with ASD?"* This is a reasonable and important question to consider. In fact, there have been ongoing debates for many decades about what is most important to teach, and what are the most effective methodologies for teaching children with ASD. Such differences of opinion are reflected in a myriad of different educational approaches currently available, and have been passionately debated in published literature and at conferences. For example, some approaches consider eye contact, matching, imitation, and compliance to directions as the essential "readiness skills" that must be the focus of educational efforts. Such skills are typically taught in an adult-directed, highly structured, repetitive drill-like teaching format, especially in early stages of programming. Other approaches emphasize reciprocal social engagement as the primary goal, while yet others strive to teach children to work independently following a sequence of visual, organizational supports, with less attention paid to social



Pictured above: Ryan uses a picture communication support and picture symbols for "talking about" experiences, like this ride on Dumbo. Supports like this have been an essential component of Ryan's expressive language and communication skills.

communication. Implicit in focusing on any of these priorities is the belief that the skills being worked on will have the greatest positive impact on the lives of children.

It is noteworthy, however, that following a recent review of two decades of research on educational interventions for children with autism, an expert panel appointed by the National Academy of Sciences (NRC, 2001) concluded that there is no evidence that any one approach is more effective than other approaches. Furthermore, in studies that report long-term outcomes using different approaches (e.g., ABA and Floor-time), only about half the children have very positive outcomes regardless of the approach. Most importantly, the panel argued for the introduction of new dynamic approaches based on a number of educational priorities. The priorities include functional spontaneous communication, development of social relationships and play skills with peers, and acquisition of functional abilities in meaningful activities, all of which are fully consistent with the priorities of the SCERTS Model.

The SCERTS Model reflects our conviction that by prioritizing social communication, emotional regulation and transactional support, educators, parents and clinicians are better able to have a positive impact on a child's development and quality of life. We believe that the focus on these components of the SCERTS Model is best supported by research on core challenges, as well as priorities and concerns identified by parents, persons with ASD who have written about and speak about their challenges, and experts in the field. We also believe that these capacities are essential for children to succeed academically, and to support optimal learning of functional skills, such as self-help and adaptive living skills. Furthermore, available research and our years of clinical experience indicate that abilities in social communication, emotional regulation with implementation of transactional supports are likely the primary factors that are very closely related to the most positive outcomes in children.

Another important consideration is that SC, ER and TS are life-span abilities. Our initial work on the SCERTS Model has focused primarily on children in the preschool and primary school years. However, professionals and parents to whom we consult, or who have recently attended seminars on the SCERTS Model, have provided feedback that it is not a model just for children, but that it is a "life-span" model, and it is relevant for persons from childhood through adulthood. Certainly, this contention would need to be validated by successful application of the SCERTS Model with older individuals. However, the applicability of the Model across a broad range of ages seems logical when we consider that abilities in social communication, emotional regulation, and transactional support are factors that enhance human development and quality of life for persons of all ages. To bring this point home, we need only to reflect on each of our own lives and our daily experiences, and the considerable influence that capacities in SC, ER and TS have on a daily basis on our emotional well being and quality of life.

Enhancing capacities in SC and ER are also priorities for families. Research on major concerns expressed by families about their children appears to be closely related to issues of social communication and emotional regulation. Bristol and Schopler (1984) interviewed hundreds of parents to explore the family experience of raising a child with ASD. They found that parents reported that in the preschool and school years, a number of specific difficulties related to their child's disability were the source of greatest concern and caused the greatest stress on the family. These included the children's lack of effective communication, problems in developing relationships with family members and a lack of response to family members, behavior management problems and embarrassment in public due to their children's behavior. All of these difficulties can be directly attributed to limitations in social communication and emotional regulation. Additionally, our many years of experience in consulting to and working directly with children with ASD have validated the primacy of challenges in social communication and emotional regulation, and the need for ongoing transactional supports when working with children with ASD and their families. In our routine consultations for schools and families, as well as in "crisis" situations, the problems that are invariably raised are related to a youngster's difficulties in communicating basic needs, exerting social control in socially acceptable ways, and in staying well-regulated and attentionally focused in the face of overly stimulating, frustrating and stressful circumstances. Such difficulties negatively impact caregivers' relationships with a child, their ability to support the child's emotional regulation and to provide effective and emotionally satisfying learning experiences.

In summary, we believe multiple sources of information support the need for an educational model that focuses on social communication and emotional regulation, with the strategic implementation of transactional supports. We also believe that the development of a child's competence and confidence in communicating and in developing positive relationships is best supported in everyday social activities with caring and responsive partners who are able to enhance a youngster's capacities for social communication and emotional regulation. Furthermore, the very process of enhancing social communication abilities and supporting emotional regulation is an essential part of "connecting" with a child, leading to long-term, trusting relationships. Establishing such relationships, in turn, may prevent behavioral difficulties, passivity and/or despondency for children, inevitable outcomes of chronic frustration, anxiety and/or a lack of trust and limited success in social interaction.

What the SCERTS Model "Is and Is Not"

In order to better clarify where the SCERTS Model "stands" relative to other available models, we will briefly consider its essential characteristics.

The SCERTS Model is a value-based model - Unlike many other models or approaches used with children with ASD, the SCERTS Model is grounded in explicitly stated core values and principles that guide educational efforts. It is our belief that without such core values and guiding principles, there is the risk of teaching skills to a child that may be thought of as important (based on the bias of the developers of a program or approach), when in reality, such skills have a minimal impact on a child's quality of life and independence. Furthermore, we believe that it is essential that an educational approach be respectful of a child and family. By explicitly stating the values and guiding principles underlying implementation of the SCERTS Model, we can ensure that when applying this model, practices will be focused on the most functional and meaningful goals for a child, and will be respectful of children and families. Table 4 presents the SCERTS Model Statement of Core Values and Guiding Principles.

The SCERTS Model is not a curriculum focused solely on training skills. The model focuses on underlying capacities as well as supporting the development of functional skills, individualized for each child - The SCERTS Model is focused on directly addressing the core developmental challenges faced by children with ASD as identified in the research literature (i.e., social

Table 4. SCERTS Model Statement of Core Values and Guiding Principles

1. The development of spontaneous, functional communication abilities and emotional regulatory capacities are of the highest priority in educational and treatment efforts.

2. Principles and research on child development frame assessment and educational efforts. Goals and activities are developmentally appropriate and functional, relative to a child's adaptive abilities and the necessary skills for maximizing enjoyment, success and independence in daily experiences.

3. All domains of a child's development (e.g., communicative, socioemotional, cognitive, and motor) are interrelated and interdependent. Assessment and educational efforts must address these relationships.

4. All behavior is viewed as purposeful. Functions of behavior may include communication, emotional regulation and engagement in adaptive skills. For children who display unconventional or problem behaviors, there is an emphasis on determining the function of the behavior and supporting the development of more appropriate ways to accomplish those functions.

5. A child's unique learning profile of strengths and weaknesses plays a critical role in determining appropriate accommodations for facilitating competence in the domains of social-communication and emotional regulation.

6. Natural routines across home, school, and community environments provide the educational and treatment contexts for learning, and for the development of positive relationships. Progress is measured in reference to increasing competence and active participation in daily experiences and routines.

7. It is the primary responsibility of professionals to establish positive relationships with children and with family members. All children and family members are treated with dignity and respect.

8. Family members are considered experts about their child. Assessment and educational efforts are viewed as collaborative processes with family members, and principles of family-centered practice are advocated to build consensus with the family and enhance the collaborative process.

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communication and emotional regulation). It is not a sequence of skills or content to teach. Clearly stated and defined goals, and guidelines and activities for enhancing abilities in the areas of social communication, emotional regulation and transactional support are essential components of model, however, many other abilities that will support children with ASD (preacademic skills, academic skills, self-help skills) may be targeted within the model as well. However, because the priority is to support children in social communication and emotional regulation as the foundations for learning and relating, the Model focuses both on these underlying capacities as well as supporting the development of functional skills. Therefore, the model clearly is compatible with other flexible, semi-structured approaches in which the primary goals are to develop educational, self-help and independent living skills.

The SCERTS Model <u>is not</u> a prescription. It <u>is</u> systematic and semi-structured, but <u>flexible</u> - Some educational approaches for children with ASD are highly prescriptive. That is, they are characterized by teaching practices that follow a specific sequence of teaching steps, with little room

for variation, flexibility or spontaneity on the part of the instructor or the child. Some approaches may also involve adherence to a "lock-step" sequence of goals in particular skill areas, with training on readiness or prerequisite skills necessary before working on other abilities believed to be more sophisticated or advanced. In many cases, such approaches may rely heavily on "*adult-directed instruction*" also referred to as "*directive teaching approaches*", with the focus being on teaching children compliance to requests, and "correct responses". Consistent with this focus, progress typically is assessed primarily in terms of percentage of correct responses in predetermined teaching programs. The justification for highly structured directive approaches is that very young children with ASD, or those with less abilities who may be older, are not able to learn in less structured settings or without a high degree of repetitive practice. In such approaches, children may not have opportunities to benefit from learning with and from other children, due to the belief that children with ASD are not able to learn in social settings due to the nature of their disability, and therefore require primarily 1:1 tutorial instruction.

There is no doubt that the high degree of structure in prescriptive programs has the clear "benefit" of providing clear expectations and a highly predictable format. However, it is our experience that an over-reliance on prescriptive teaching practices perpetuates social and cognitive inflexibility, which is such a challenge for many children with ASD who are predisposed to interacting, learning and behaving in inflexible ways due to their learning style and the very nature of their disability.

In contrast to an over-reliance on prescriptive teaching, other approaches base their goals and teaching practices primarily on following a child's preferences and motivations, and accepting a child's behavioral responses through imitation or positive emotional reactions. For these approaches, which have been referred to as "*facilitative*" or "*follow the child's lead approaches*", the goals tend to be more focused on building social relationships and trust, rather than providing direct instruction in specific social-communicative, cognitive or self-help skills. We agree that by acknowledging a child's focus of attention, motivations and interests, and by interacting with a high degree of social and emotional responsiveness, we are more likely to support positive emotional experience, and build relationships more conducive to a learning partnership. However, we also believe that children with ASD benefit from some degree of structure in activities and daily experiences (i.e., consistency and predictability) to entice and motivate communication and social engagement. It also is a well-known fact that consistency and predictability support emotional regulation for all children, including those with ASD. Furthermore, by infusing learning opportunities in *motivating meaningful activities* that are functional in everyday routines, skills can be targeted and acquired in a more flexible manner.

Thus, in contrast to either prescriptive or facilitative approaches, the SCERTS Model attempts to work in the "middle-ground" in that it is systematic and semi-structured, but flexible, with a hierarchy of goals in social communication and emotional regulation informed by research on child development and based on each child's needs and family priorities. Activities are designed to be consistent and predictable, with an overriding priority on social communication, social and emotional reciprocity and creative problem solving fostered in the context of meaningful activities, shared enjoyable experience and *shared control*. Shared control involves two or more partners having opportunities for turn-taking and choice-making, with the ultimate goal of each partner developing the capacity to follow the other partner's agenda. In this manner, the model is flexible and responsive, allowing partners to capitalize on a child's motivation, spontaneous communication and "teachable moments".

Furthermore, a basic tenet of the SCERTS Model is that to work effectively with children, it is always necessary to take into account a child's level of emotional arousal and regulation, and therefore, the child's "availability" to learn and participate in social exchange. Structure, consistency and predictability provide the framework and support for learning; however, a

child's self-determination and the ability to adapt and grow emotionally is enhanced by flexibility within structure, opportunities for children to have social control through communication and choice making, and opportunities to solve problems in a variety of activities. We believe children with ASD of all ages and ability levels can benefit from this kind of approach, although developmentally younger children and children who are less able to regulate emotionally and to organize themselves in achieving goals may initially benefit from a greater degree of consistency and predictability, and external support. In this manner, the Model is flexible enough to be responsive to *individual differences* in children, with activities designed to provide varying degrees of interpersonal or educational supports, depending on a child's abilities and needs in different activities.

The SCERTS Model is not exclusionary of other practices or approaches. It is flexible enough to incorporate practices from available approaches and teaching strategies - Many positive practices coming from a myriad of approaches have been developed over the past two decades for children with ASD. However, with particular approaches, it is not permissible to make modifications or changes in prescribed teaching practices. For example, very specific instructions may need to be followed on how learning environments are structured, how "stimuli" used for teaching should be presented, how much time should be given for a child to respond, and how teachers may (or may not) respond to a child's behavior. Thus, some approaches resemble "closed systems", rather than drawing from a range of effective practices that may be integrated flexibly based on a child's needs and learning style. The SCERTS Model is flexible enough to incorporate practices from a variety of approaches and innovative teaching strategies (e.g., augmentative communication, organizational supports, sensory supports, relaxation techniques and Social Stories (Gray, 1994). However, only those that support social communication and emotional regulation, and that are philosophically consistent with the core values and guiding principles of the Model (see Table 4) are considered compatible with practice in the SCERTS Model.

Why another model for supporting the development of children with ASD?

Other reasonable questions might be, *"Why another model for supporting the development of children with ASD? Isn't there enough confusion for both families and professionals with all that is available?"* The SCERTS Model was developed to address a number of needs, based on the authors' training in a broad range of approaches, our intimate working knowledge of the research as well as strengths and weaknesses of different approaches, and our years of experience consulting to both families and programs utilizing a range of approaches. The model is designed to directly fill a void based on what we perceive as the major gaps in current service provision, and in some cases, the philosophical and practical fragmentation underlying practices used with children with ASD and their families. Furthermore, as noted earlier, an expert panel on "educational interventions" for children with ASD (NRC, 2001) indicated that there is a clear need for the development and testing of new and innovative educational models for children with ASD based on their findings of a number of limitations of currently available models. Therefore, the SCERTS Model has been developed as a "next generation" model for working with children with ASD to address the acknowledged limitations of available models.

We are excited about the SCERTS Model as a vehicle for helping to move education of children with ASD forward in a more comprehensive and meaningful manner. We are currently planning research to demonstrate efficacy of the Model in a variety of settings. To illustrate how the SCERTS Model may be applied in "real-life" circumstances, the following article, *Kyle's Story* explores how one youngster with ASD has benefited from this approach. We also encourage you to read the article by Joanne Quinn, *The SCERTS Model: Our Family's Experience,* as she shares how the SCERTS Model has been implemented for her son Patrick.

REFERENCES

Bristol, M., & Schopler, E. (1984). A developmental perspective on stress and coping in families of autistic children. In J. Blacher (Ed.), Families of severely handicapped children, New York, NY: Academic Press.

Gray, C. (1994). Social Stories. Arlington, TX: Future Horizons.

National Research Council (2001). Educating children with autism. Committee on Educational Interventions for Children with Autism. Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press. (Available at the website of the National Academy of Science Press – www.nap.edu)

Prizant, B., M. Wetherby, A. M., Rubin, E., Rydell, P., and Laurent, C. A. (in progress). THE SCERTS Model Manual: Enhancing communication and socioemotional abilities of young children with ASD. Baltimore, MD: Paul Brookes Publishing.

Prizant, B. M., Wetherby, A. M., Rubin, E., Rydell, P., and Laurent, A. C. (2003, in press). THE SCERTS Model: A family-centered, transactional approach to enhancing communication and socioemotional abilities of young children with ASD. Infants and young children.

Prizant, B. M., Wetherby, A., M.,& Rydell, P. (2000). Communication intervention issues for children with autism spectrum disorders. In A. Wetherby & B. Prizant (Eds.), Autism spectrum disorders: A transactional developmental perspective (volume 9), Baltimore, MD: Brookes.

Prizant, B.M., Schuler, A.L. Wetherby, A. M., and Rydell, P. (1997). Enhancing language and communication: Language approaches. In D. Cohen & F. Volkmar (Eds.), Handbook of autism and pervasive developmental disorders (Second Edition). New York: Wiley.

Prizant, B.M. & Rubin, E. (1999). Contemporary issues in interventions for autism spectrum disorders: A commentary. Journal of the Association for Persons with Severe Handicaps, 24, 3, 199-208.

Prizant, B. M. & Wetherby, A. M. (1998). Understanding the continuum of discrete-trial traditional behavioral to social-pragmatic developmental approaches in communication enhancement for young children with autism/PDD. Seminars in speech and language, 19, 4, 329-353.

Schuler, A.L., Wetherby, A.M. & Prizant, B.M. (1997). Enhancing language and communication: Prelanguage approaches. In D. Cohen & F. Volkmar (Eds.), Handbook of autism and pervasive developmental disorders (2nd Edition).

Wetherby, A.M., & Prizant, B.M. (Eds.) (2000). Autism spectrum disorders: A developmental, transactional perspective. Baltimore, MD: Paul Brookes Publishing Company

Wetherby, A. M., Prizant, B.M., & Schuler, A.L. (1997). Enhancing language and communication: Theoretical foundations. In D. Cohen & F. Volkmar (Eds.), Handbook of autism and pervasive developmental disorders (2nd edition). NY: Wiley.