Preface

The child is both the artist and the painting.
—ALFRED ADLER

This book describes a comprehensive approach for working with very young autistic children that fosters children's spontaneous tendency to learn, communicate, and approach and interact with others (what we call *initiative*), as well as their ability to engage with others and the world at large, while addressing their individual learning needs. The approach, called the Early Start Denver Model (ESDM), is a rigorous intervention method that addresses each child as an individual by following each child's unique interests and proclivities and providing a "scaffold" for their ability to use everyday experiences and their play for all areas of their development, especially communication and language development as well as social interactions and relationship development. The ESDM uses knowledge both of child development and of how each child learns to design strategies that facilitate their development and skill acquisition.

The ESDM deeply embraces both "constructionist" and "transactional" models of child development. The constructionist approach views young children as active beings who construct their own mental and social world out of their motor, cognitive, communicative, sensory, and interpersonal–affective experiences. In other words, the child is the artist painting their own picture of the world. In this approach, we recognize that autism is associated with unique and valuable perspectives and ways of interacting with the world, and respect and nurture each autistic child's interests and talents. The transactional approach views young children and the other people in their world as affecting and influencing the development of each other through their moment-by-moment shared experiences and communication. Caregivers' temperaments, behavior, and emotions shape and change young children's behavior, feelings, and internal representations of people and of the world. At the same time, child temperament, behavior, emotions, and skills alter the internal experiences and behavior of caregivers, and this goes on continuously throughout their lives. Through this interactive process, the painting is co-created.

The ESDM intervention starts when the behavioral signs of autism first appear and incorporates findings from developmental research involving both neurotypical and neurodiverse children into its teaching curriculum and techniques. The ESDM is

defined by (1) a specific developmental curriculum (individual objectives derived from the *ESDM Curriculum Checklist*) that defines the skills to be taught at any given time and (2) a specific set of teaching procedures used to deliver the curriculum. The ESDM is not tied to a specific delivery setting. Its approach can be embedded into everyday interactions that occur between adults and young children, and thus it can be applied in clinical settings; in group educational and care settings, both specialized and inclusive; in everyday activities at home; and in community activities and settings. The ESDM can be delivered by individuals from a wide range of disciplines, as well as by caregivers who have learned the approach. A variety of studies conducted internationally, including randomized controlled trials, have shown that the ESDM is effective for improving children's outcomes regardless of the setting involved, with improvements reflected in increases in children's cognitive and language abilities, social relationships, and adaptive skills.

The ESDM seeks to ensure that the adults provide the ingredients needed for autistic children to become active participants in the social world: initiating interactions with other people, expressing their needs and desires, sharing their interests and talents, receiving needed support for their goals and needs, and developing a satisfying, engaged, and contributive life as an autistic person. To do so, the ESDM (1) promotes communication, language, play, social relationships, and overall developmental learning to ensure that children experience a myriad of learning opportunities in their activities and interactions each and every day (something that seems to happen effortlessly for neurotypical children); (2) encourages caregivers and other adults in a child's life to adapt their interaction style to enhance the fit between the child, with their sometimes unique way of processing information, and the people, environments, and events in their lives, to optimize children's learning and social engagement; and finally, (3) enables interventionists, teachers, therapists, and caregivers to learn to (a) capture and hold children's interest and attention; (b) follow a child's leads, interests, and preferred activities; and (c) provide learning activities while responding contingently to the child's acts ("balanced interactions" or "shared control"), so as to maximize opportunities for positive shared emotions and social learning experiences.

By embedding these strategies in child-preferred activities and everyday experiences, the adult using ESDM can prime, scaffold, and assure naturalistic rewards for child learning while increasing children's initiations and responses to their social partner. The immediate effect of these techniques is a dramatic increase in the number of social learning opportunities the child is experiencing, minute by minute, hour by hour, and day by day. Although this increase in learning opportunities also occurs in other intervention methods, such as discrete trial teaching, such methods often put the child in the role of the responder rather than initiator, with the child's initiations sometimes suppressed. Instead, the ESDM begins by eliciting and supporting the child's social initiative and social engagement.

The ESDM is not unique in this approach; a number of other developmental and social-communicative models of early autism intervention (i.e., naturalistic developmental behavioral interventions [NDBI]) also foster this kind of initiative: both JASPER (joint attention, symbolic play, engagement, and regulation) and SCERTS (social communication, emotional regulation, transactional support) come to mind. However, the ESDM differs from these other approaches in several ways:

1. The ESDM predates other models that focus on facilitating the relationship between the autistic child and their caregiver while focusing on the child's developmental and communicative learning. In fact, the first articles on the Denver Model date from the 1980s, and many of the main aspects of the model—the focus on quality of relationship, positive child affect, balanced social interactions, the "one-up rule," the use of sensory social routines to develop social initiative, and the approach to language development beginning with natural gestures—were already in place and described in the first 1986 article, well before the other NDBI approaches first appeared in print.

2. There is a large body of peer-reviewed, published empirical work supporting the ESDM model. At this time, there are well over 100 research articles on the ESDM, including randomized controlled clinical trials and meta-analyses that combine data across multiple studies by many different authors worldwide. Thus, the ESDM is probably the best studied of any of the NDBI early autism interventions.

3. The ESDM model is very well articulated. Both the teaching content and the teaching procedures are thoroughly described, with fidelity measures and data-collection systems provided in multiple published tools, easily found in the public domain. When used as described, the ESDM provides a comprehensive and carefully detailed program of activities and teaching objectives that can be used by anyone, anywhere: in group day-care and preschool programs, at home with the family, in individual sessions with a wide range of early interventionists, and in community activities with other children. No special setting, special language or terminology, or special materials are required. That is another of its strengths.

4. The ESDM model is data based and stresses the importance of ongoing data collection to evaluate teaching efficacy and adjust and maximize progress.

5. The ESDM model is developmentally comprehensive. It addresses all the developmental skills of early childhood—language, play, social interaction, and joint attention—but also imitation, motor skills, cognition, self-care, and behavior. Moreover, the ESDM recognizes the importance of an interdisciplinary approach involving many types of professionals to meet the complex needs of young autistic children.

6. The ESDM model provides a systematic way of altering the intervention when children are not progressing well—one decision tree for clinicians to use when the child is not making expected amounts of progress, another to use when child behavior problems are getting in the way of learning, and a third when spoken language is not developing as expected. These allow for the full range of empirically supported practices to be brought into use in a thoughtful, evidence-based, and step-by-step fashion to meet the individual learning profiles and needs of each child within a single comprehensive intervention model.

7. The ESDM model has been successfully implemented and evaluated in multiple countries and cultures, including countries with emerging or developing economies such as South Africa, Kenya, Ukraine, and Vietnam. It has been translated into 19 languages, including Japanese, Italian, Dutch, French, Spanish, Portuguese, Chinese (two versions), Arabic, Romanian, Korean, Polish, German, Russian, Vietnamese, Turkish, and Georgian. At this time, at least 48 studies on the use of the ESDM in 15 countries outside of the United States have been published.

8. Unlike other developmentally oriented interventions for autism, the ESDM also implements teaching strategies and concepts used in applied behavior analysis (ABA; i.e., reinforcement, extinction, modeling, prompting, fading, shaping, and chaining) in a clearly articulated manner. However, the ESDM differs from some ABA-based approaches, such as a discrete trial approach, in several ways:

- It uses a curriculum that is based on the most current concepts derived from the scientific literature, focusing on children's development rather than analysis of behavioral excesses and deficits.
- There is an explicit focus on the quality of relationships, affect, and adult sensitivity and responsivity, including measurement of these variables, a feature that is often missing in ABA-based intervention approaches.
- The strategies and the curriculum used to facilitate language development are based on the most current scientific understanding of how language develops rather than a Skinnerian model.
- The ESDM stresses children's initiative, choice, and preferences and encourages sensitivity to the unique information-processing needs associated with autism, such as providing multiple modalities for learning, including language learning, recognizing sensory-processing differences, and promoting optimal levels of child energy or arousal for learning, among several others.

The ESDM has been well documented to be effective in enhancing development in autistic children from toddlerhood through the late preschool period. Ongoing studies are extending the ESDM to cover the periods of infancy and early school age and are examining its efficacy in countries with developing economies.

WHY A SECOND EDITION?

Just as the Denver Model changed over the years, the ESDM has also changed over the past decade and a half since the first edition of the ESDM manual was published. Intervention approaches need to incorporate the most recent learning available, whether from scientific studies or clinical experiences with many children, families, and team members. Several factors motivated us to update the ESDM manual.

- *Incorporating new scientific findings*. The revised edition incorporates new scientific findings regarding what is known about autism, its developmental course and brain basis, and how early skills typically develop in young children. Chapter 1 describes a contemporary view of the neuroscience of learning and autism. For example, it was previously hypothesized that social stimuli are not as salient or rewarding for autistic as for typical individuals, which leads to reduced attention to, preference for, and engagement with social stimuli, such as faces and speech (referred to as the *social motivation hypothesis*). However, recent neuroimaging studies have not supported the notion that social stimuli are less rewarding for them. Instead, other factors could explain these differences in attention and preferences. For example, the unpredictable and multisensory nature of social stimuli might make it difficult for the autistic child to make sense of social stimuli. Differences in sensory processing might make social stimuli over- or

underarousing. The goal of the ESDM is to structure the interaction with the child in such a way as to optimize enjoyment, attention, engagement, and learning. In Chapter 2, we provide an update on studies that have examined how ESDM intervention influences early brain development in children.

Newly published research and perspectives have also changed how we define and think about promoting children's language development, as described in Chapter 8. In the revised edition of the ESDM manual, we define *language* as the use and understanding of a system of signs and symbols—spoken, gestured, or graphic (pictorial and written)—that are used to convey meanings to represent one's thoughts, feelings, memories, and ideas to oneself and others. Research has shown that children are multimodal communicators who can learn more than one symbol system for expression and often do learn more than one system (e.g., pictures, gestures, and speech) over time. Our early intervention studies have taught us that most autistic toddlers develop spoken language during the first 2 years of intervention. Thus, the ESDM has a strong focus on supporting the development of spoken language. At the same time, the revised ESDM manual explicitly addresses the use of alternative language systems, such as sign and graphic systems, to promote children's language development when a child's rate of progress in learning spoken language demonstrates the need for additional support. To this end, we have updated the Expressive Language Decision Tree as a guide for making decisions about how and what to teach (see Chapter 8).

• *An expanded focus on augmentative and alternative approaches to language development.* One of the largest additions to this revised edition is a much more comprehensive approach to language development than in the previous edition, which was primarily focused on spoken language. Although the spoken language outcomes of children in our studies have been one of the greatest areas of change we have seen, and although many of the children in those studies had significant intellectual and language disabilities, our samples were not representative community samples, either in the range of their other medical diagnoses or their socioeconomic and cultural/ethnic backgrounds. The current edition places much more emphasis on supporting the transition from prelinguistic communication to representational language, regardless of the symbol system involved, with preparation for visual, graphic, signed, or spoken language beginning in the prelinguistic phases across the cognitive, imitation, play, and communication domains. It also places much more emphasis on the use of augmentative and alternative communication (AAC) and gestural strategies from the very beginning of language development as opposed to considering alternative systems as a "rescue" strategy when spoken language is not progressing as expected. Based partly on the studies of bilingualism in autism and based very much on the knowledge that all language users use various types of symbols—including gestural, graphic, visual, and spoken—in their everyday communications, we understand (and have seen in the children we have worked with) the advantages of supporting multiple approaches to assist the language-learning process. The revised decision tree and the content in Chapters 7 and 8 were strongly guided by the work of the AAC ESDM Group, an international committee of ESDM-certified trainers who were also speech–language pathologists with expertise in the use of AAC for young children. (We thank Céline Robertson, Joanna Kwasiborska-Dudek, Mary McKenna, Michelle Procópio, Renee Charlifue-Smith, Eva-Maria Daly, Jennifer Villarreal, and Janet Harden, who contributed much time and expertise to this

aspect of the revised manual. Janet Harden, in particular, made substantial contributions to this revision.)

• *Expanded empirical findings on the efficacy of the ESDM.* As mentioned earlier, there are well over 100 research articles on the ESDM, including articles describing randomized controlled clinical trials and meta-analyses that combine data across multiple studies. In Chapter 2, which provides an overview of the ESDM, we present detailed information about a wide range of clinical trials conducted with children from infancy through early school age, including studies of low-intensity caregiver-coaching intervention, group-based intervention, and intensive intervention conducted over multiyear periods, as well as studies that examine how the ESDM compares with other intervention approaches, delivered at different levels of intensity. Multiple studies of caregiver-delivered ESDM, including studies with infants, have led to the refinement of the caregiver-coaching approaches that are included in this revision. This broadened research base has substantially increased our understanding of the benefits of the ESDM while pointing to new directions for future studies.

• *The global reach and cultural implications of using the ESDM with families whose cultural experiences and values differ from those of their interventionists.* In the past several years, research on the ESDM across the globe has expanded dramatically and informed our understanding of how the ESDM can be adapted to different economic and cultural settings. In Chapter 13, we describe the research literature on the ESDM in countries outside of the United States, including studies in Austria, Australia, Canada, China, France, Israel, Italy, Japan, New Zealand, Russia, South Africa, South Korea, Switzerland, Taiwan, and Vietnam. We provide far more detailed guidance about collaborating with families and communities whose cultural experiences, resources, and values differ in important ways from our own. In that chapter, we also pay special attention to what has been learned about how to adapt the ESDM to settings in which there are few trained professionals and minimal resources for families.

• *A new focus on infants and toddlers whose families are concerned about possible autism, addressed by both intervention strategies and an expanded second edition of the* Early Start Denver Model Curriculum Checklist for Infants and Young Autistic Children *(available as a separately sold product from The Guilford Press).* In the revised edition, we touch on the topic of working with infants and toddlers whose development and characteristics have raised concerns about autism but who have not yet been seen for a diagnostic workup, either because they are too young or because the service is not yet available to them. This discussion and the revised checklist items (as found in the revised *ESDM Curriculum Checklist*) are the result of several research projects and papers carried out with our colleagues Laurie Vismara and Meagan Talbott. The expanded *ESDM Curriculum Checklist* includes items that are developmentally appropriate for infants as young as 6 months of age. Recognizing the importance of early vocal development in infancy for the later development of speech communication, we have added a set of items focused specifically on promoting early vocalizations and their use in communication with others. Similarly, items have been added that focus on the skills acquired during infancy that provide the foundation for joint attention, imitation, and play.

• *A holistic perspective that considers the child's physical health.* The second edition expands on our earlier perspective that autism is a complex condition that involves

multiple systems and requires an interdisciplinary team approach. We provide an update on findings that view autism through a holistic lens that considers not only behavior but also physical health, including attention to issues such as sleep and gastrointestinal problems, as well as psychiatric conditions that frequently co-occur with autism, such as attention-deficit/hyperactivity disorder. We know that these co-occurring conditions can have a huge impact on quality of life for both the child and their family and impede intervention progress if not addressed.

• *A greatly expanded section on working with caregivers*. This revision draws from the text on coaching parents in the ESDM that we coauthored with Laurie Vismara in 2021. We have also greatly expanded our description of strategies for supporting caregivers to learn and embed ESDM strategies into everyday life with their autistic children, inside family life as lived. As with the first edition of this text, the new edition provides up-to-date evidence from ESDM studies and updated strategies for every aspect of the use of the ESDM as it is currently being practiced with young autistic children and their families.

• *A neurodiversity-affirming approach*. The second edition reflects our commitment to a neurodiversity-affirming approach, both in terms of the way we deliver early intervention and how we define successful outcomes of intervention. The neurodiversity perspective recognizes that each person has a unique brain and a unique learning environment, resulting in individual differences in personal characteristics, traits, and abilities. Characteristics that have historically been associated with autism, such as repetitive behavior, differences in the use of eye contact for communication, and difficulties with the pragmatics of communication, were viewed in the past from a medical orientation as "deficits" and targets for intervention. Earlier intervention approaches (although not the ESDM) focused on symptom reduction; that is, a decrease in standard measures of symptoms was seen as an important intervention target.

This is not the orientation of the ESDM, which takes the perspective that the diagnostic characteristics of autism that result in early identification reflect differences in brain functioning that represent how each child learns, perceives, experiences, and adapts to the people, environments, and events that make up that child's world. A diversity perspective embraces the full range of human functioning and development and commits to welcoming, respecting, and including all; having gratitude for what each person contributes to the group and the world; and being ready to understand and support the needs of each person in the group. A diversity perspective rejects the idea of "normalization," or expecting all to fit within a specific pattern, and instead embraces the idea of collaboration, cooperation, and individual thriving within the social milieu, be it at home, with family and friends, in the neighborhood and community, or in learning, work, and recreational environments. Adaptation is a two-way street for all—individuals adapting to a group as the group adapts to its members, recognizing that some individuals adapt more easily and some individuals need more support than others—an equity model. The ESDM seeks to promote social engagement, communication, and learning for an autistic child via adaptations on the part of both the adult and the child.

In the ESDM, progress is reflected by children's learning of their individual developmental objectives, which are constructed from their own profiles of strengths, needs, learning rates, interests, and family and team goals. Goals are not focused on behavior

reduction or symptom change. Instead, goals reflect growth in learning and development. An optimal outcome of ESDM intervention is defined not by losing an autism diagnosis, by classroom placement, or by accelerating standard scores but rather by having an enhanced quality of life, which we define for young children as (1) having initiative, agency, and choice, expressed through communication/language understood and respected by others; (2) developing meaningful social relationships and the sense of acceptance and security that result; (3) experiencing enjoyment of the activities involved in everyday life, participating with family members, peers, and caring adults in one's community and culture; (4) learning and developing skills, talents, and personal independence; and (5) using one's skills and preferences in productive (learning and contributing to one's group/society) and pleasurable (play and recreation) ways. This viewpoint is evident throughout the second edition of the ESDM manual, including using identity-first language (although we also fully support individual preferences in the use of identity-first vs. person-first language). While focusing on the diversity perspective, we clearly and fully recognize that autism is associated with many significant and at times severe challenges for the autistic child and their family, and we have spent our clinical lives working with children and families with very pressing needs. This recognition is why this revision has included even more detailed strategies for helping children who have severely challenging behavior, children who have severe difficulties with cognitive and language development, and children whose progress is not proceeding well (see Chapter 10).

In closing, we hope that parents, other caregivers, early interventionists, early educators, special educators, general educators, social workers, occupational and physical therapists, speech–language pathologists, and child psychiatrists and psychologists, among others, will find this updated edition of the ESDM manual helpful in their work promoting the early development of young autistic children.

CHAPTER THUMBNAILS

In the first chapter, we review findings from the research on the science of learning and brain development that have influenced the ESDM. Chapter 2 presents the foundations for the ESDM and describes its curriculum, core teaching procedures, and research evidence of effectiveness. Chapter 3 describes practical aspects of ESDM delivery, including the range of settings, the interdisciplinary team, and partnering with families. Chapters 4 and 5 detail the ESDM evaluation and intervention planning, respectively, including how to define teaching goals, plan for daily teaching, and track progress within and across sessions. Chapter 6 provides step-by-step instructions on how to become a social partner and develop joint-activity play routines with the child. Joint-activity routines provide a format for teaching intentional communication (Chapter 7), language development (Chapter 8), and children's imitation and play skills (Chapter 9). Strategies for promoting social engagement and interaction are embedded throughout the curriculum and these chapters. In Chapter 10, we describe strategies to use and a decision tree to follow when children's overall progress in the ESDM is concerning. In Chapter 11, we focus on what it means to partner with families as a critical aspect of the ESDM intervention and provide strategies for doing so. Our closing chapters situate the ESDM in

different contexts: Chapter 12 describes special considerations for implementing the ESDM in group settings, such as preschool programs, and Chapter 13 discusses what to consider when implementing the ESDM in different cultures throughout the world.

The ESDM Intervention Fidelity Coding Sheet appears as the Appendix to this volume. This coding sheet is used to document an interventionist's ability to use the ESDM with fidelity by rating observed therapy sessions by the interventionist and assessing the degree to which they are effectively using core principles of ESDM, including the interventionist's ability to support the child's attention, quality of teaching, use of instructional techniques, and quality of dyadic engagement, among several other principles. Fidelity coding is an important part of training in ESDM and research studies as well as an important tool for clinicians in measuring and self-monitoring adherence to ESDM teaching practices.

We encourage you to visit this book's companion website (*www.guilford.com/rogers6-materials*), which features supplementary sections that (1) describe how to use the ESDM Intervention Fidelity Rating System and (2) supply detailed definitions and descriptions of key ESDM strategies.

Finally, the revised *ESDM Curriculum Checklist* is a necessary tool for using the ESDM approach. It is available as a separate publication of The Guilford Press.