

The Developmental, Individual Difference, and Relationship Based (DIR®) Model Theory and Application with Children with Autistic Spectrum Disorders

This document has been developed to provide professional colleagues and parents in Australia information on -:

- The theoretical and research support for the DIR® model, with an emphasis on the application of the DIR® Floortime approach with children with an autistic spectrum disorder.
- Experiences and perspectives from professionals who are using the DIR® approach in their work with children and families as well as anecdotal evidence from our local Australian parents using DIR® Floortime as an effective approach with their children.
- The levels of training and mentorship required by professionals to be able to practice as a DIR® Floortime therapist/educator at an accredited level.
- The DIR® infrastructure and networks within Australia – please refer to the DIR training body website at www.icdl.com to find Australian DIR professionals.

Please note that this paper has been written and collated by staff from the Learning Tree Therapy Centre, a multidisciplinary DIR® based service, which is based in Perth, Western Australia (www.learningtreetherapy.com.au, www.sensoryconnections.com.au).

For extensive information about DIR® or Floortime™ please visit www.icdl.com

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Learning Tree Therapy Centre: Position Paper

*The Developmental, Individual Difference, and Relationship Based (DIR®) Model
Theory and Application with Autistic Spectrum Disorders*

Introduction:

The Developmental, Individual Difference and Relationship based model (DIR®)/ Floortime™ is an approach that is gaining a lot of interest in Australia. The purpose of this position paper is to provide introductory information about the DIR® model including theoretical and research support, and to outline clinical applications when working with individuals with Autism Spectrum Disorder (ASD) and their families. DIR® is currently in its infancy stage in Australia and our intention in providing this information is to provide an accurate and informed perspective.

The Developmental, Individual Difference and Relationship based model emerged from work in the field of Infant Mental Health in the 1970's, by Dr Stanley Greenspan, child psychiatrist, and Serena Wieder, Clinical Psychologist. At this time, pioneering work was being undertaken which investigated for the first time, the importance of caregivers' interactions with infants and neonates and how they played a critical role in human development. Stanley Greenspan was part of a group of pioneers in the field of child development - his colleagues included Berry Brazelton MD, Reginald Lourie, Sally Provence, Selma Fraiberg, and Al Sohi. Evolving from this work, Greenspan & Wieder (1998) developed the DIR® approach at the National Institute of Mental Health (NIMH). Dr. Stanley Greenspan and Serena Wieder, PhD, expanded their work with multi-risk families from the focus on child caregiver patterns and the impact on typical development, to look at atypical development. They began to investigate the individual biological differences experienced by children and how this impacts on the developmental trajectory of the child.

DIR® provides not only a conceptual framework for understanding child development but also a road map for assessment and intervention. The framework of DIR® helps systematise many traditional approaches to assessment and intervention and to create a comprehensive approach by integrating elements that are often ignored or dealt with only superficially. Floortime™ is a term that is commonly used in conjunction with DIR®. Floortime™ is at the heart of a DIR® based intervention program and is both a specific technique – in which for 20 to 30 minutes a caregiver will spend time interacting with the child in a tailored and targeted way, for a number of periods throughout the day, but also a general philosophy that characterises all daily interactions with the child.

We would like to emphasise that DIR® provides a conceptual framework that can be used with a range of diagnostic groups and special needs conditions in addition to autistic spectrum disorders.

Conceptual Framework:

The DIR® approach is a comprehensive developmental biopsychosocial model that provides a system for classifying and treating different groups of childhood mental health, developmental, and learning disorders. This systematic detailed and dynamic approach is outlined in detail in the IDCL: Diagnostic Manual of Infancy and Childhood (ICDL:DMIC). DIR® provides a multiaxial, multisystem approach where each primary disorder is profiled in terms of the contributions from Functional Emotional Developmental Levels, regulatory sensory processing differences, language capacities, visual spatial abilities, as well as interactive and family patterns, stressors, and other medical conditions.

AXIS 1 - Primary Diagnosis

- 100. Interactive disorders
- 200. Regulatory-Sensory Processing Disorders
- 300. Neurodevelopmental Disorders of Relating and Communicating
- 400. Language Disorders
- 500. Learning Challenges

AXIS II - Functional Emotional Developmental Capacities
AXIS III - Regulatory-Sensory Processing Capacities
AXIS IV - Language Capacities
AXIS V - Visuospatial Capacities
AXIS VI - Child-caregiver and Family Patterns
AXIS VII - Stress
AXIS VIII - Other Medical and Neurological Diagnoses.

Specifically the multi axial system considers three broad categories of developmental and learning disorders which include -:

- Interactive Disorders (Anxiety, Depression, Disruptive behaviours),
- Regulatory Sensory Processing Disorders (Sensory Modulation, Sensory Discrimination, Sensory Based Motor Disorders), and
- Neurodevelopmental Disorders of Relating and Communicating (NDRC).

The NDRC category includes children with significant challenges in relating, communicating and thinking including children with autism spectrum disorders. This category is further divided into 4 subtypes based specifically on individual processing differences of the child which include clusters of auditory and language processing; motor planning and sequencing, visual spatial processing, and sensory modulation challenges. Each type features clusters of processing areas that are on a continuum and as children make progress, we see movement within each type as well as from one type to another. This enables intervention to specifically focus on each child's unique profile, including strengths and weaknesses and provides a unique dynamic

and functional classification system for clinicians/educators (Interdisciplinary Council on Developmental and Learning Disorders, 2005).

The DIR® model encompasses three corner stones, firstly it is based on an understanding of the stages of **Development**, secondly there is an understanding of the **Individual Differences** in processing capacities that occur in children, and thirdly, but most importantly there is an emphasis on the vital importance of interactive **Relationships** as being the catalyst for mind and brain growth in the early years.

The DSM IV-TR criteria describe the triad of deficits which includes qualitative impairments in both social interaction and communication, and restrictive repetitive patterns of behaviour, interests and activities. The DIR® model provides a road-map for addressing these core deficits with an emphasis on the basic foundations of relating, communicating and thinking. By building those core developmental social emotional capacities DIR® address these symptoms such as stereotypical behaviours, self stimulation, and self absorption (Greenspan & Wieder, 2006, p. 390).

(D) DEVELOPMENT

At the core of the DIR® model is a developmental approach to assessment and intervention, which focuses on helping each child climb the developmental ladder (Greenspan & Wieder, 1998). This "Developmental Ladder" consists of six fundamental Functional Emotional Developmental Levels or milestones and three additional levels for children with higher levels of functioning, which lay a foundation for all learning and development. It provides a systematic roadmap for the development of healthy social emotional functioning. Children with challenges often do not master these steps seamlessly, and require intensive input to overcome compromises in range, stability and flexibility of these capacities.

Rather than assessment of each different component area (language, motor, cognitive, social emotional skills) in very separate isolated ways, the DIR® clinician looks at how each of these areas, including the neurobiological differences that are evidenced by children with ASD (pg 6) impacts on the child's ability to master the Functional Emotional Developmental Levels. There is an emphasis on how progress in all areas of development is interrelated.

The Six Functional Emotional Developmental Levels or Stages consist of:-

1. Self-regulation and shared attention - This reflects the child's ability to calm so that they can begin to learn about their world - both the sensory environment and early relationships. The child is using all their senses to perceive and understand the patterns of their world and with each emotional response produced by each sensation, they are learning how to react to their

world. For example a child with ASD might be oversensitive to noise and so withdraw from the caregiver, as a result of the sound of their voice. Being unable to regulate his response to this sensory input, the child learns that people talking is an unpleasant situation.

2. Relationships (attachments) - This is seen as the stage when a child has the desire to be part of a relationship. The child is now differentiating between the pleasures of interacting with people versus interest in inanimate objects. This is a typically frustrating stage for parents of children with ASD as they become aware of the difficulty in getting their child to engage with them and instead often see withdrawal and self-absorption behaviours.
3. The ability to engage in two-way communication - At this level, the child is no longer just showing interest in interactions but is learning about social reciprocity, reading emotional signals and separating their own emotions from those of others and understanding cause and effect. The child's communication, even without words is now seen as quite intentional. Children with ASD are often seen to lack the ability to maintain this back and forth interaction. Typically they are seen to lack initiation and function more as responders or to engage only in one or two circles with their caregiver unlike the elaborate flow of interaction seen in typically-developing children.
4. The ability to create complex gestures, to string together a series of actions into a deliberate and elaborate problem-solving sequence - Children at this stage are building up an understanding of the patterns of the world - awareness of emotional responses of others and the reciprocal actions needed as well as understanding the physical world and how it works. This stage of social problem-solving requires the child to negotiate and build in many steps in an interaction (motor planning and sequencing) Children with ASD often show clear signs of difficulty at this stage as they are often not able to initiate and maintain the engagement necessary thus restricting their awareness of the social patterns, often resulting in repetitive or perseverative behaviour.
5. The ability to create ideas - This is the stage where we typically expect the emergence of words. Words are a reflection of the child's ability to hold images in their minds and their understanding of a connection between these images and their emotional experiences. For example, the child who previously hit out at his mother for removing a toy, can now symbolise that anger by saying "no" or "me cross". Instead of actions alone, words are also used to express ideas and convey feelings and intent. The scripting or echolalia common to children with ASD reflects the lack of mastery of complex emotional signalling at Stage 4, thus restricting the link between emotional experiences and the development of meaning and symbols.

6. The ability to build bridges between ideas to make them reality-based and logical - The child at this stage is now connecting ideas together and understanding the logical sequences of ideas and feelings, paving the way for more complex thinking and reflecting. As their experiences develop, the child learns to distinguish between their own internal experiences and the external experiences occurring in an interaction with another person. Children with ASD will often struggle with this level due to their more concrete and rigid thinking. Exaggerated emotional reactions are common often as the result of misreading more complex social interactions.

(Greenspan & Wieder, 1998).

The new Bayley Scales Kit of Infant and Early Childhood Development now includes the Greenspan Social-Emotional Growth Chart (SEGC), a parent questionnaire on the DIR® Functional Emotional Developmental Levels (FEDLs). This is also now available as a separate tool. In a recent study by the Psychological Corporation, the SEGC was field tested on a representative sample of 1,500 infants and young children and found to discriminate between children with problems and disorders and those without. The study also validated the age predictions of the FEDLs and showed that the first four pre symbolic FEDLs precluded the later ones, including language and symbolic thinking. Research has also indicated that the SEGC evidences a high degree of specificity (90%) and sensitivity (87%) for ASD. (www.harcourt.com) (See www.icdl.com/stagin/conferences/conferences/2007/SEGCHandouts.shtml)

The primary goal of care-giving in the early years is to facilitate healthy functioning. Research from the mental health field informs us that the mind and brain grow most rapidly in the early years as a result of interactions with caregivers and that language and cognition, as well as emotional and social skills, are learned through interactive relationships. This is an essential component of a comprehensive intervention program (Siegal, 1999). For infants and young children at risk of developmental problems, this goal is essential.

A road-map of what constitutes healthy functioning needs to comprehensively include aspects of intellectual, language, emotional and social, sensory and motor capacities as well as family functioning. By focusing on healthy functioning rather than symptom reversal, parents and professionals can understand a child's unique pattern of challenges, strengths and weakness, relationships and family patterns.

A broader and more refined "functional" developmental framework looks for compromises in the child's healthy milestones and helps parents and other caregivers work with the child to improve that area of functioning and overall healthy progression (Greenspan et al., 2008). DIR® is an approach that focuses on the underlying challenges that lead to autistic symptoms, rather than only on the symptoms themselves, and with this comes a focus on assisting children to

overcome these challenges through interactive relationships to enable them to follow the developmental progression that leads to enjoying relationships and engaging in meaningful communication.

As described, typically children with an autism spectrum disorder, because of their underlying neuro biological differences and challenges, may present with constrictions across all of the Functional Emotional Developmental Levels particularly with exchanging reciprocal emotional signals in back and forth interactions as part of a relationship. The framework provided by the FEDL's provides a systematic way of establishing a baseline and for setting developmentally based goals for the child.

(I) INDIVIDUAL DIFFERENCES

A primary insight that informs DIR® is that each child is unique in the way that they experience the world through their senses. A child's symptoms and problem behaviours often stem from underlying problems in sensory modulation and processing, motor planning and affective integration (Williamson & Anzalone, 2004).

“In this way the biological side of autism is expressed not in some global autistic pattern, but through the individual ways children react to and comprehend the various sights, sounds, touches and movement pattern in their environment and the ways they plan their actions.” (Greenspan & Wieder, 2006, p.39).

The importance of gathering information about a child's neurobiological profile, both areas of strength and challenge, is vital because this provides the caregiver with clues on how to "calibrate" their interactions to support "individual differences".

"A well-informed early interventionalist can structure the environment and instruct the primary communication partners of the child with autism so that the environment helps the child with autism to learn" (Williams, 2008, p. 11).

An example, if a child is poorly registering and orientating to speech, however is able to register and orient to certain tone or sound effects then this provides a clue for the caregiver on how to woo that child into a learning interaction. A comprehensive functional developmental assessment includes information about the child's unique neurobiological thumbprint including their regulatory sensory processing profile (including sensory modulation, sensory discrimination and postural motor based capacities), auditory and language and visual spatial processing capacities (See DMIC Axis 111, 1V, V)

The complex process of organising sensation from the body and the environment for use can be conceptualised as embracing five interrelated components:

1. Sensory registration - Initial awareness of the sensory input ("I have been touched").
2. Orientation - Selective attention to the new input ("I have been touched there").
3. Interpretation - Integration of input across sensory modalities and / or the attribution of meaning.
4. Organisation of a response - I can plan an action.
5. Execution of a response - Performance of the cognitive, affective, and / or motor response, including the sensory affective input that is generated with this response.

(Williamson & Anzalone, 2004)

Each individual child has a point at which summed sensory input activates the central nervous system, or a sensory threshold and this can be variable, depending on the child's current level of arousal, previous sensory and affective experiences and expectations. Registration and orientation is an area of vulnerability for many children on the autistic spectrum, who may over focus on detail, or conversely fail to attend to important stimuli. Children with ASD frequently show challenges with social referencing, the ability to monitor and respond to the emotional responses of people around them (Dawson, 2006). Auditory and visual perceptual challenges are frequently presented with children with ASD not showing typical responses to speech or emotional facial responses with a greater focus on objects.

Naturalistic affect-based approaches such as Floortime focus on promoting social engagement through supporting the child's learning that the caregivers face, body and gestures are rewarding and meaningful, e.g. the caregiver works to use their body as a sensory affective tool to assist the child to orient as well as shift orientation and develop joint attention.

Neural Interconnectivity Theory

Paying attention to what another person is paying attention to is a cornerstone for social learning and underlying neurobiological differences evidenced by children with ASD result in joint attention being a common area of difficulty. A child with ASD may hear their name but not know how to orchestrate the auditory stimuli with the visual/ postural target required to turn to locate the person in space (White, 2008).

Joint Attention involves interconnectivity within various brain areas which function in synchrony in typical development (Mundy, 2006). Interconnectivity theory is a model in autism in which either too many or too few neuronal connections are made in the brain of children with ASD so that there is an emphasis upon local processing and a lack of integration and cohesive inter-working of specialised local neural networks, leading to fragmented processing which leads to many challenges including social motivation challenges seen in children with autism. There can be a miss synchrony between the auditory, visual, and postural targeting resulting in the child experiencing difficulty in sharing attention including their ability to be able to initiate

alternate gaze between an object and a person, respond by following the gaze of another person, and initiate coordination attention to elicit aid in attaining an object or event. Gaze shift requires affect, an ability to register and orient towards faces, and the child's capacity to be able to initiate that sequence of actions.

"...autism also involves decreased connectivity between more distant brain regions. This under-connectivity makes it more difficult for children with autism to process information quickly, to integrate different processing tasks, and to flexibly reorganise processing networks in response to task demands. Because of under-connectivity, children with autism will have difficulty when the processing load increases. The processing load is increased with greater amounts of information, a reduction in the time to process the information, or the need to integrate different pieces of information... the different areas of the brain that are the key players for a processing task have trouble communicating with each other... it results in difficulty with processing tasks that require large, highly integrated brain networks such as language and social-emotional functions".

(Williams, 2008, p. 14)

Diane Williams additionally (2008, p.16) relates implications in terms of early intervention practices,

"The brain in autism appears to form very strong local connections. Strong local connections are probably why children with autism succeed at learning through association. However, strong local connections may interfere with the development of cognitive flexibility, making it more difficult for children to function in demanding environments. Therefore, interventionists who work with young children with autism should be careful when using rote or highly structured teaching methods. Children with autism may 'over-learn' or create connections between information that will interfere with the development of the flexible use of cognition and language".

DIR® focuses on the importance of having an understanding of the unique processing profile of the child across integrated sensory, motor, cognitive, and communicative development rather than working with the child in terms of isolated skill development through highly structured teaching methods. DIR® by using affective interactions tailored to the sensory motor profile of the child as its primary tool of intervention, supports building the child's capacity to integrate and build interconnectivity between brain areas.

"Stanley Greenspan has recognised that there is an intrinsic motivational system (affect) that develops typically very early and is involved in motivation and learning and this is what we need to target, this comes from the inside ... you can almost explain the core deficit of autism as being a missed link between positive affect and the behaviour. Our research into social motivation and self monitoring in autism is finally catching up to what has been going in this intervention program (DIR®) for a while... this program kept alive the notion that social motivation and social motivation and social engagement are so important... and the research is now supporting this".

(Mundy, 2006).

Visual Spatial Capacities

Children with ASD may have challenges with visual spatial abilities that organise the visual world and help them make sense of such things as, - how objects operate in relationships to their bodies such as seen in children with ASD with challenges in joint attention. Visual spatial processing challenges may also result in children with fragmented thinking, an inability to be aware of other people's body space, or aimless movement in space.

Dr Greenspan and Serena Wieder (Interdisciplinary Council on Developmental and Learning Disorders, 2005) have developed, in conjunction with Dr Harry Wachs (developmental optometrist who worked with Jean Piaget), a hierarchy of six levels of visual spatial processing divided into six basic abilities, starting with understanding of one's relationship to one's own body, moving to the world of objects and others outside one's body, then progressing to the relationships between objects inside oneself, and eventually to concepts such as one to one correspondence, and higher levels of visual spatial symbolic reasoning. These concepts have been related to the DIR® model, and are described in the ICDL:DMIC Axis IV.

A DIR® therapist/ educator working with a child would use their understanding of a child's visual spatial strengths and challenges to offer opportunities to strengthen these through Floortime interactions, and these can also be specifically targeted through affect-based visual cognitive semi-structured activities as one of the components of a DIR® Comprehensive Intervention Program (CIP).

Sensory Based Motor Challenges

Children with autism commonly experience sensory based motor challenges such as challenges with postural control, and dyspraxia. Recent research indicates that many of the early indicators of ASD are motor based including impairments in gestural communication (Landa, Holman, & Garret-Mayer, 2007). Deficits in young children with ASD extend beyond joint attention, Dr Landa describes

"...toddlers with ASD appear to be quite compromised in the motivation and resources required to exchange communicative intentions by using conventional acts (e.g. variety of gestures, consonants, and words) to share experience or to elicit assistance from someone. The aspects of impairment seen in the toddler with ASD involved early development skills that represent a critical milestone in early social learning.... such a disturbance in very early development, could interfere with infants' ability to co create social learning opportunities in their engagement with others. This, in turn, could lead to considerable reductions in the diversity and amount of social input that contributes to experience - dependent neurodevelopmental processes" (p. X).

Furthermore Dr Landa describes the need for

"...early intervention programs to robustly target social affective, social cognitive and communication development in toddlers with ASD, in addition to the current emphasis on visual - spatial, vocabulary, receptive identification, and gross motor imitation skills. In addition, gestural aspects of communication, which were quite impaired in our sample of toddlers with ASD, should be emphasised in intervention, at least during the early stages of lexical and syntactic development, because early gesture may pave the way for future linguistic development. In addition, longitudinal research indicates that failure to acquire gestural joint attention may be related to impaired language development" (p. X).

The emphasis in DIR® of targeting the pre-verbal functional emotional developmental capacities (FEDLs 1 – 4), that emphasise social engagement and reciprocity during early Floortime™ as a foundation for all higher level symbolic development is supported by emerging autism research. Dr Greenspan emphasises the motor planning and sequencing challenges evidenced by many children on the autistic spectrum and how these challenges can impact at all FEDLs, particularly when complex sequenced actions are required for social problem solving. For example, the child takes his mother by the hand, walks her to the refrigerator, and points to the food he wants. This typical scenario from a toddler requires many complex actions in a row, sequencing of motions, and using emotional signals for the child to get what they want (FEDL 4) and this is frequently challenging for ASD children. By building on extending interactions into sequences of back and forth emotional signalling during Floortime driven by the affect intent of the child, caregivers are supporting this typical developmental capacity which is the underpinnings for executive functioning (Greenspan, 2006, p. 134).

Mirror Neuron Research

Other significant findings in terms of the neuroscience of autism emerging in the 1990's include Mirror Neuron Research (Ramachandran & Oberman, 2007). It is believed that mirror neurons, and the networks that they are a part of throughout the whole brain but particularly with the emotional brain, the limbic system and the cerebellum, not only enable humans and primates to send motor commands to muscles, but also to determine the intentions of other individuals by mentally simulating their actions.

In humans the mirror neuron system may have evolved the ability to interpret more complex intentions. Mirror neurons enable us to experience by watching another person what they might be feeling; they assist us to anticipate what another person might be going to do as they assist us to read the cues and intentions of other people.

Because mirror neurons appear to be involved in social interaction, dysfunctions of this neural system could explain some of the primary symptoms of autism, including

isolation and absence of empathy. Studies of people with autism show a lack of mirror neuron activity in several regions of the brain which is sometimes described as "dormancy" rather than an absence.

Researchers speculate that treatments designed to restore this activity could alleviate some of autism's symptoms. The DIR® research that is being undertaken currently at York University (see research below) in Canada will, as one of its neurophysiologic measures, be measuring Mu wave activity (a measure of mirror neuron activity) in order to support the hypothesis that Floortime works by strengthening development of the mirror neuron system in children with ASD. Gains made in terms of higher level social thinking including the development of empathy and social reasoning in a subgroup of children receiving DIR® intervention also provides support for this hypothesis.

Regulatory Sensory Processing Profile - Reactivity & Responsiveness

DIR® professionals use their knowledge of the child's underlying neurobiological differences to give meaning to their behaviour. For example, Children displaying autistic symptoms commonly experience sensory modulation challenges, a child who is over-responsive to sound and touch might hold their ears or push away from a caregiver who tries to tickle them, a child might be under-responsive and crave sensory input but then rapidly overload so it is difficult to keep them engaged in an interactive relationship. Children who are under-reactive may move into very self absorbed patterns and miss out on the interactive experiences that are so vital for development.

There is emerging research that provides evidence that children with Autism and Asperger's Syndrome demonstrate significant symptoms of sensory processing disorder that were documented physiologically as well as behaviorally (Cure Autism Now Executive Summary, 2006). It is evident that many children on the autistic spectrum have challenges with regulating bodily arousal states. Schoen, Miller, Brett-Green, and Hepburn (2007) in their study of atypical autonomic nervous system responses to sensory stimuli in children with autism, identified two distinct patterns of arousal and sensory reactivity in children with autism and their study supported the hypothesis that some children with autism are over-aroused and more reactive while others are under-aroused and less active. One group of children had high tonic electrodermal arousal and high reactivity, i.e.: are quicker to respond to sensory stimuli, and the other group of children with autism had low tonic electrodermal arousal and low reactivity, i.e. took longer to respond to sensory stimuli and tend to habituate faster than the higher arousal group.

Sensory modulation impairments represent a mismatch between the early contextual demands of a child's external environment and his or her internal characteristics (e.g. attention, emotion, sensory processing) and can impair the

ability of the child to sustain engagement with people. DIR® emphasises that the child's ability to sustain a regulated arousal state so that they can shift from self monitoring to being able to engage with key caregivers in the world as this is foundational for their overall development.

Other recent research has resulted in the Saliency Landscape theory which suggests that connections between the sensory areas and the amygdala, which is the gateway to the emotion regulating system, may be altered in children with autism resulting in extreme emotional responses to trivial events (Ramachandran & Oberman, 2007). This may result in behaviours such as looking away to avoid stress, as well as in sensory seeking and self stimulatory behaviours. The children tended to use self-stimulatory behaviours in order to calm hyper-responsive activity of the sympathetic ('fight or flight') branch of the autonomic nervous system (Hirstein, 2001). This could account for the secondary symptoms of hypersensitivity often seen in children with autism.

In DIR® there is an emphasis on recognising that much atypical behaviour presented by children on the autistic spectrum such as avoidance of eye contact, or repetitive actions, may be a protective or adaptive response to these underlying nervous system differences. Adequate homeostasis provides a basis for the behavioural flexibility and adaptation needed to cope with multiple and changing sensory and affective inputs in the child's natural environments, and thus successfully engage and participate in the world. DIR® emphasises the need for consideration of the child's sensory regulation response pattern so that caregiver patterns can be tailored and attuned to support emotional and sensory regulation and the development of self regulation.

Turning Challenges into Strengths

By working with the child's underlying processing differences children on the autism spectrum experience, DIR® clinicians aim to tailor caregiver patterns, as well as the environment of the child to enable them to be pulled into interactive relationships which help across a broad range of development, rather than just focusing on developing isolated motor, cognitive, language skills or behaviour. Many children with autism respond to a rich relationship that has a very strong sensory basis, particularly when they have core neurobiological challenges that are described above in terms of difficulty in registration, orientation and interpretation of stimuli.

It is important to emphasise that DIR® focuses equally on how caregivers and therapists can build challenges into strengths. For example, an over-reactive child may become very intuitive and sensitive to others needs as they are supported in the developmental process through Floortime. As children move up and have stronger capacities at each of the developmental levels, they learn to work with their unique biologies rather than be ruled by them. For example, children can through their emotional expressions/ gestures or words tell caregivers / peers that

their voices are too loud, instead of shutting down or moving away from social content to escape from the noise. A primary goal in DIR® is to support children's capacities to be purposeful and intentional about controlling or responding to their environment with greater flexibility and adaptability.

(R) RELATIONSHIP

"A diagnosis of autism should not rob any child of the interactive experiences necessary to support fundamental developmental capacities and relationships".

(Greenspan, Wieder & Kalmanson, 2008, p.31)

The most important insight that informs the DIR® model is the vital influence of relationships that provide essential multiple interactions which assist the child to form a fundamental sense of relatedness. This describes the relationship between the child and caregivers, family members and larger culture (Foley & Hochman, 2006). This focus on systemic factors in the care-giving patterns is a critical component.

These interaction patterns can bring the child's biology into the larger developmental progression and can contribute to the negotiation of the child's functional emotional developmental capacities. Developmentally appropriate interactions mobilize the child's intentions and affects and enable the child to broaden his or her range of experience at each level of development, moving from one level to the next. In contrast, interactions that do not deal with the child's functional emotional developmental level can undermine progress, for example, a caregiver who is aloof or depressed may not be able to engage an infant who is under-reactive or self-absorbed (Foley & Hochman, 2006).

DIR® may work with caregivers in two ways: active coaching of Floortime™ with the child, and working with the parents' or caregivers' own difficulties in interacting with their children. Therefore, the model includes dynamic coaching and educational roles in which the parents' move to active mastery and discovery about their child's individual profile and how to enhance relationships, and also sessions without the child present where the parents' feelings about the child and how these influence relationships can be freely explored. Parental conflicts and anxieties are also important considerations in this dynamic (Foley & Hochman, 2006).

Additionally, family patterns need to be considered in the Relationship component of the model. These contribute greatly to the child's current functioning. Parental involvement to understand and work with these patterns is critical to maximise the family's understanding of the child's profile, his or her sensitivities and challenges and maximise strengths. The Relationship component of the model has developed from a strong basis embedded in the work of Attachment theory and interventions, family system theory and family therapy approaches (Ainsworth, Bell & Stayton,

1974; Bowlby, 1951; Stern, 1974). Recent developments in relationship based models have seen more emphasis on the caregiver influences. Social interactionist intervention models, such as the Hanen model, have been studied which have parallels to the DIR® model. The Hanen programme is an internationally recognised model, which has a specific programme (More than Words) to target families with children with ASD.

In a comparison of children with autism compared with children without developmental challenges and matched for IQ scores, what separates them is their ability for abstract reflective thinking including making inferences; engaging in reciprocal affect interactions as part of a continuous flow of interactive problem solving; and evidencing high levels of relatedness and empathy (Minschew & Goldstein, 2000).

DIR® A Comprehensive Intervention Program

A DIR® comprehensive intervention program (CIP) is individualised to the unique developmental and sensory profile of the child as well as the consideration of caregiver and family needs with the goal of improving individual differences in sensory motor, language and social functioning and supporting family and other learning relationships. Floortime™ is the most important component of a comprehensive individualised DIR® program. In addition to Floortime™, comprehensive DIR® intervention includes activities and therapies that are always both interactive and developmentally appropriate, and are selected and balanced to fit the profile of the child and the family. Together, they constitute a complete and full time approach which addresses the changing goals of the child and family. Aspects of this CIP would typically include occupational therapy, speech and language therapy, family support, and specific techniques which may include elements of more structured approaches, such as behavioural strategies.

A treatment program follows the method and techniques of DIR® as set forth by Dr Stanley Greenspan and Serena Wieder, PhD. Providers using DIR® and Floortime™ need to have specialised training and ongoing reflective supervision with a DIR certificate trained professional. See information about the comprehensive training requirements for DIR® clinicians described below.

There is a recommendation that primary caregivers provide 20 - 30 hours of Floortime™ at home with their child and as such a DIR® program requires active participation of the parents. Most families find it necessary to have at least one parent home based or working part time to enable this intensity during intensive early intervention. To support this, families meet each week for coaching / instruction / evaluation of progress with trained DIR® therapists or educators. Paraprofessional staff are frequently employed to offer support to the caregivers. Specific treatment sessions such as occupational therapy, speech and language therapy, physiotherapy, early childhood education, are implemented as necessary for

the individual needs and profile of the child. Service delivery is tailored to the needs of the child and family, and might include individual sessions, peer group work, child parent play groups, involvement of siblings and typically developing peers during therapy, as well as service delivery in the child's natural environments such as home, day care or educational settings. Although a DIR® program focuses on the child, therapists and educators endeavour to treat the whole family in keeping with the DIR™ philosophy and psychological support for family members as integral aspect to the program. See appendix (pg 30) for home program model diagram.

Using Floortime™ and the DIR® Model With children with Autism

Floortime™ is at the heart of a DIR® based intervention program and is both a specific technique – in which for 20 to 30 minutes at a time a caregiver will spend time interacting with the child in a tailored and targeted way, but also a general philosophy that characterises all daily interactions with the child. During Floortime™ the caregiver “follows the child’s lead”, by harnessing the child’s natural interests. The caregiver is trained to look for the intention or meaning behind the child’s actions. In Floortime™ caregivers take our cue from the child because a child’s interests or desires are seen, as the window into his/her emotional and intellectual life.

Once the caregiver is hooked into a relationship and a shared world with the child the next step is to extend on this by providing opportunities to build the child’s ability to move into building a continuous flow of interactions and moving into supporting higher level thinking and problem solving capacities. During the unstructured Floortime™ play sessions, the child is encouraged to take the lead, initiate the ideas, and the adult both follows the child's ideas and intentions, and expands on these through challenging the child. During Floortime™ a child experiences support spontaneous, purposeful, and flowing interactions at both presymbolic and symbolic levels.

DIR® therapists/educators also address secondary symptoms seen in children on the autistic spectrum such as “self stimulation”, and self absorption. These secondary symptoms are seen as stemming from the core deficits, for example some children lack the ability to be engaged in “shared social problem solving” with their toys and to play with them in a flexible way with parents, therefore just line up their toys. Typically developing children expand their range of interests through their communicative interactions with others, when these interactions are very constricted, the range of interests remains narrow and symptoms persist. These symptoms therefore are seen as reflecting that the child has not mastered core functional emotional abilities and the focus of treatment, rather on being on eliminating or changing a specific behaviour is on building the child’s ability to self regulate, engage, relate, interact and think.

Play based or social-pragmatic approaches (such as Floortime™) are characterized by contingent, reciprocal, fun interactions with children that address the core deficits in autism including engageability, love of people, problem-solving, creativity, and emotional thinking (Greenspan et al., 2008).

The primary goal of DIR® is to enable children to form a sense of themselves as intentional, interactive individuals; to develop cognitive, language, and social capacities from this sense of intentionality as they progress through the six functional emotional developmental capacities described above.

RESEARCH SUPPORTING THE DIR®/FLOORTIME™ MODEL

1. Greenspan Social Emotional Growth Chart (SEGC) – DIR® theory was tested on a representative population of 1500 children whose parents were administered the SEGC as part of the standardization studies for the new Bayley Scales of Infant Development. Mastery of the early stages of affect transformation was found to be necessary for children to progress to the subsequent stages, and the first four stages were required for the capacities for symbol formation, pragmatic language, and higher level thinking (including theory of mind capacities such as empathy), and for social referencing and joint attentional capacities (such as reciprocal shared social problem solving (Greenspan, Wieder & Kalmundson, 2008).
2. Pilot study of a parent training program for young children with autism (The PLAY Project home consultation program) - Sixty-eight children completed the 8-12 month program, of parents delivering 15 hours per week of 1:1 interaction based on DIR®/Floortime principles. Pre and post blind ratings of Functional Emotional Assessment Scale (FEAS) clips showed statistically significant ($p < 0.0001$) in child subscale scores. Clinically this equates to 45.5% of children making good to very good functional developmental progress. Program satisfaction was rated at 90%, and average cost of intervention was \$2500/year (Solomon, Nechels, Ferch & Bruckman, 2007).
3. Can children with autism master the core deficits and become empathic, creative and reflective? - A study of 16 children with ASD revealed that the DIR®/Floortime™ approach found that a subgroup of children can become creative empathic and reflective, and master the core deficits associated with ASD. These children were aged 12 to 17 years of age and were a sub group who were found to not only sustain gains in relating, communicating and reflective and abstract thinking, but also made further progress showing talents in music and writing to include poetry, high levels of empathy, and the Achenbach Child Behaviour Checklist found expected range of mental health issues related to adolescence and family stress. It is noted that as the children in this study were brought to the researchers by their families, who

were motivated to work within this comprehensive approach, they were not a representative population of children with ASD (Wieder & Greenspan, 2005).

4. Relationship focused early intervention with children with PDD and other disabilities -This study compares the effects of relationship based EI for children with PDD (N=20) or Developmental Disabilities (N=30) over a one-year period. Both groups made significant gains in their cognitive, communication, and socio-emotional functioning, with the PDD group making greater statistically significant gains across developmental measures than the Developmental Disability group. In weekly sessions, mothers were trained to use strategies associated with 5 components of responsive interactive behaviour: reciprocity, contingency, shared control, affect and match. Eighty percent of mothers in this study showed an increase in responsiveness which was associated with improvements in attention, persistence, initiation and joint attention in their children. This study reinforced the notion that increased responsive interaction plays an important role in facilitating social interactive behaviour in children with ASD (Mahoney & Perales, 2005).
5. The Milton and Ethel Harris Research Initiative assessing behavioural and neurophysiological outcomes of intensive DIR® intervention for children with autism - This is a controlled scientific study to compare children with autism who receive DIR® intervention with a matched control group. The study is currently under investigation and will determine treatment effect of the immediate treatment group to the delayed treatment group, the magnitude of gains after 24 months of intensive DIR® intervention, any correlation between the intensity of parent intervention and treatment gains, and will examine which cohort of children with ASD respond better to DIR® interventions. Preliminary findings suggest significant gains after one year (Greenspan, Wieder & Kalmundson, 2008).

Many studies have been completed in the area of other social interactionist models which have parallels to the DIR® model:

1. Mc Conachie, Randle and Le Couteur (2005) compared outcomes for language and communication skills of children with and without a diagnosis of autism as well as changes in parental skill in a controlled trial. Intervention included 20 hours of instruction, based on the More than Words programme, in groups of 8 families and 3 follow-up home visits. Results showed a significant increase in the responsiveness of parents of children with ASD compared to the control group. The strategies introduced empowered the parents to interact and play with their child, where previously they were unable to do so. There was also a significant difference in terms of vocabulary size for the experimental versus the control group.

2. Aldred, Green and Adams (2004) conducted a randomised controlled trial using apparent-administered social interactionist model, which confirmed that this type of intervention can influence gains in joint interaction and communication skills in children with ASD. Their subjects consisted of 28 children with ASD and their parents who were randomly selected for either the control or experimental group. Parents attended initial workshops to learn facilitatory strategies including responsiveness, joint attention, reciprocity and other strategies to elicit communication and interaction. These workshops were followed by 6 monthly treatment sessions and 6 maintenance sessions. The parents in the experimental group showed increase responsiveness to their children. The consequences of this for the children was increased reciprocal social interaction, social engagement and spontaneous initiation of social interaction as measured by ADOS, increased expressive vocabulary and more children's communication acts during a videotaped play sample.
3. A longitudinal study by Siller and Sigman (2002) looked at the effect of the behaviour of 25 parents of children with autism and its relationship to their child's communication development. The children were first assessed at (mean age of) 50.3 months using the Early Social Communication Scale, RDLS and videotapes of parent-child interactions. Reassessment occurred at intervals of 1 year later, 10 years and 16 years after initial assessment. Findings showed that parents with higher levels of synchronisation during early play interactions had children who maintained superior communication and language skills. The authors have suggested some interesting causal links to communication skills as a result of their study. They propose that parent's pursuit of the child's focus reduces attentional deficits, involvement in a shared intentional state helps the child understand the internal state of others and having a sensitive interactive partner provides a motivating environment for communication.

The importance of developmental approaches was supported by the National Research Council/National Academy of Sciences 2001 report *Educating Children with Autism*, which mentioned a number of evidence-based approaches, including the DIR®/Floortime™ model. The National Academy of Sciences report also emphasised the fact that there have been no comparative studies on different interventions and no definitive evidence behind any one approach over another. The reports emphasised the importance of tailoring the approach to the child. This last point is at the heart of a comprehensive developmental approach such as DIR®, which views the child's functional capacities, both strengths and challenges, as a guide for how best to foster adaptive development (Greenspan et al, 2008).

The Role of the Interdisciplinary Council on Development and Learning Disorders (ICDL)

DIR® Training Opportunities for Professionals and Parents

The Interdisciplinary Council on Developmental and Learning Disorders (ICDL) is a non profit organisation founded by Stanley Greenspan, MD, and Serena Wieder, PhD and is the official DIR® training organisation. The organisational goal of ICDL is to

...“integrate knowledge and competencies from different disciplines and improve prevention, assessment, diagnosis, and treatment of emotional and developmental disorders in infancy and childhood by implementing coordinated promotion, prevention, and intervention activities at the family, community, and policy level, guided by a comprehensive human development bio-psycho-social (DIR® Floortime™) model.” www.icdl.com

The ICDL Advisory Board and Faculty come from a highly distinguished group of world class professionals across multiple areas of expertise - see www.icdl.com

ICDL has a wide range of initiatives including training and education programs. These include an annual conference (with over 1,000 attendees), numerous pre conference workshops (see attached schedule of Annual 2007 November Conference), annual spring introductory training program, and an annual DIR® Certificate Institute training program. All of these programs have been operational over the last 10 - 12 years. ICDL has expanded to provide greater educational opportunities with the ICDL graduate school which began operation in June 2007. The PhD in Infant and Early Childhood Mental Health and Developmental Disorders is a distant learning program for qualified applicants and is made available for international applicants. ICDL also is developing other Distance Learning Initiatives which includes a range of learning opportunities including an online training version of the DIR® / Floortime™ Basic Introductory course. This course which was presented by Dr Stanley Greenspan himself and included a post conference workshop was made available for the first time in April 2008. Of the over 3,000 that registered for this training there were approximately 300 registered participants from Australia.

The programs that ICDL has provided through a distant learning format are of particular interest for Australians and there are plans to extend the range of distant learning training opportunities.

Requirements for DIR® Certificate Training

The ICDL DIR® Institute provides educational programs to professionals of all disciplines, parents and Floortime practitioners to utilize the DIR® model. A distinguished faculty promotes the development of clinical and educational competencies through courses, workshops, and intensive programs leading to a

DIR® certificate. Candidates of the DIR® institute come from a range of different disciplines including: education, special education, developmental and clinical psychology, speech and language pathology, occupational therapy, physical therapy, art, drama and music therapy, clinical social work, marriage and family therapists, nursing, pediatrics, developmental paediatrics. There is a pre requisite that Candidates have at minimal a Bachelors Degree and licensure in one of the above professional fields.

The Institute program has been running since 1999 and has a highly credentialed group of interdisciplinary faculty teaching DIR®. Several hundred clinicians and educators, and up to 50 faculty now participate in the 5 day intensive Institute program which is held in annually each July in the USA. There are regional institute programs now emerging both nationally and internationally in DIR® networks on a smaller scale to the major institute training. There are numerous DIR® based programs in a range of different settings in the private and public sector, health, early intervention, educational programs, infant mental health for example. A full listing of DIR® professionals and the settings and programs that they are working in is available on the ICDL website at www.icdl.com.

Regional DIR® institute programs are currently being developed in Central and South America, Europe, Ireland, Israel and Hong Kong. Here in Australia our DIR® network is also working in conjunction with ICDL to develop an Australian based DIR® regional institute program.

DIR® Institute Program Description Outlining Requirements for Certification of Professionals

There are a number of stages that outline the DIR® certificate training process. The minimal time taken by a professional from start of DIR® training to finish is 3 years including 3 attendances at the 5 day intensive institute intensive program. Due to the nature of the developmental learning process undertaken during this process it is very common for many clinicians or educators to take much longer than this to meet the full requirements to the high standard required by ICDL to demonstrate the capacities of an integrated DIR® clinician or educator.

DIR® Beginning (DIR® B) is a five day program for licensed and credentialed multidisciplinary professionals and educators who are beginning DIR® practice. Pre-requisites are attendance at a DIR® introductory level course and beginning DIR® practice. Candidates are asked to present a vignette and Floortime video to present in a small group for discussion. The DIR® B prepares candidates for the Certificate Program (DIR® C) following acquisition of further DIR® experience.

DIR® C Clinical Specialist and Educator Certificate Program is the next step of training following the DIR® B. It provides in depth advanced levels of education to assure the quality and recognition of DIR® competencies. Acquisition of the Certificate is based on demonstration of clinical or educational competencies through

case presentation at a minimum of two summer institutes (in addition to prior DIR® B attendance). To enter the DIR® C program candidates are expected to already have some range of experience within their discipline and are required to present multiple times during the course of the DIR® C as they are advanced through the program and meet criteria. This includes -: an assessment and short term treatment case (about one year) presented the first institute, a long term case (18+ months) demonstrating experience integrated DIR® in comprehensive assessments, treatment, and work with families, schools, groups, etc presented the second institute, a clinical challenge presented in the second institute. Following this candidates are required to submit a written case and video of a long term case (2 years or more) which is assessed by two ICDL faculty members. Candidates at this stage in the process of certificate training are invited to return to a DIR® C Institute 111 program to present their written case in an advanced group. Candidates are expected to obtain at minimal 25 hours of individual reflective professional development during the course of the program with ICDL faculty and it is not uncommon for candidates to receive many more hours of group or individual tutoring / supervision during this process.

In addition to these two core programs, the DIR® Institute also provides a Floortime™ Player program (for para professionals), an Administration program (to support administrators of DIR® based programs, and a Facilitator Training program.

DIR® Australian Networks

DIR® emerged in Australia 2003 when Kathy Walmsley and Georgina Ahrens, both DIR® trained Occupational Therapists moved back from the USA and opened private practices in Perth and Sydney respectively. Both Kathy and Georgina had been trained by ICDL senior faculty over a number of years. Since that time a number of professionals are now undertaking DIR® certificate training, and this combined with a growing number of parents who are using DIR® and Floortime™ with their children has really strengthened the DIR® networks in Australia. Kathy Walmsley, Occupational Therapist in Perth is international faculty with ICDL and runs introductory level trainings and workshops in this region with support from colleagues who are in the advanced stages of DIR certificate training.

Summary and Conclusion

This paper has aimed to provide information about the Developmental, Individual difference, and relationship based approach (DIR®) as a comprehensive model of assessment and intervention for children on the autistic spectrum. This approach provides a developmental framework that focuses on a child's functional emotional developmental capacities, individual differences in sensory, motor, cognitive, and communicative development;

and the child-parent relationships and child caregiver interactions. Relationships are the vehicle for creating learning interactions which are tailored to a child's individual processing differences and thereby enable a child to progressively master six core functional emotional developmental capacities. DIR® is an approach that offers parents and professionals a systematised developmental approach to assessment and intervention, which puts relationships and interactions based on a child's intent or affect at the centre of assessment and intervention for children with autism. Research support for DIR® comes primarily from the field of child development and from current neuroscience findings. There are a growing network of DIR® providers and parent networks across Australia and increasing opportunities are available to access training and professional support both online and through upcoming regional trainings. A range of parent initiatives have arisen already and more are in the pipeline as there is increasing demand by parents for access to clinical and educationally based DIR® services across Australia and an increasing interest being generated by professionals who are discovering DIR®. Anecdotal evidence provided by Australian parents who are currently using DIR® and Floortime™ with their ASD child (see Appendix) provides a window to hear first hand of these experiences with DIR® in our own community, and how this approach is informing and empowering parents to connect and support their child's development using the best tool that they have available to them, their relationship with their child.

Michelle Marsh, Clinical Psychologist, DIR C Candidate

Anne Nunn, Speech and Language Pathologist

Kathy Walmsley, Occupational Therapist, DIR® Certificate, ICDL

Updated September 2008

Information about Australian DIR networks updated July 2010 By Kathy Walmsley, ICDL Faculty

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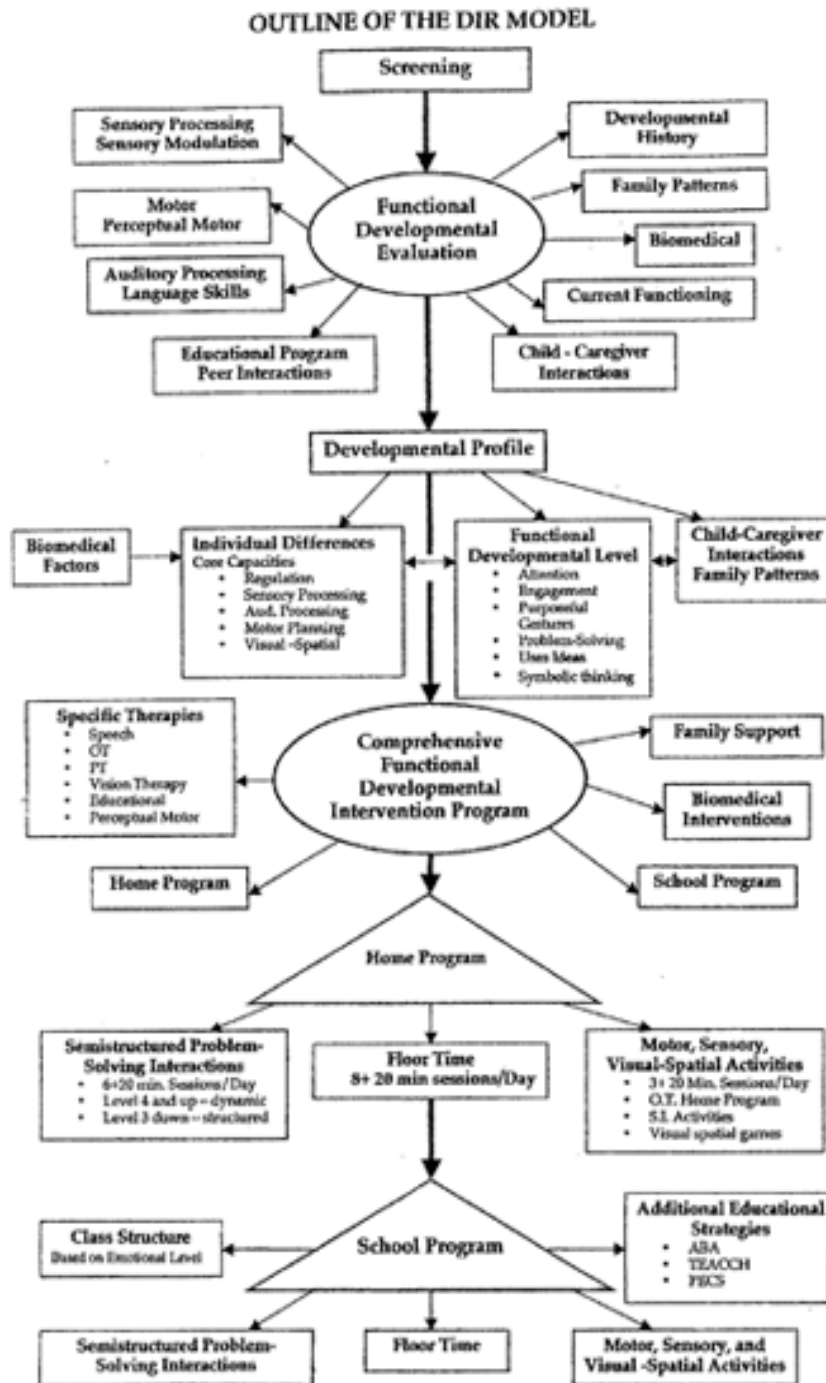
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APPENDIX 1:



LTTC

APPENDIX 2: Parent Testimonials

Written by a parent of a 4 year old child with ASD, from Perth.

I am General Practitioner of 12 years experience. I am also a parent of a child with Autism Spectrum Disorder (ASD) and Global Development Delay. He is on the severe end of the spectrum. As a GP, I had limited prior experience of ASD . I recall seeing maybe 4 patients with ASD in my working life but they tend not to see us much as they were probably too busy seeking professional help from therapists. Most parents I have met were surprised when I told them that I had no idea my son had a developmental disorder until he was 2 ½ years old. This is my first child and I was firstly a parent when I returned home from work. I was also in denial in the initial stage.

When my son was diagnosed with ASD, I went through a period of grief like what almost every other parent went through - denial, anger, blame, bargaining, acceptance, sense of loss etc. We jumped straight into the only therapy we knew of at the time which was Applied Behavioural Therapy (ABA). I read books written by Lovaas and Catherine Maurice who are very passionate about ABA. I could see some merits to what the program was trying to achieve and my son started saying some words but they were memorized and had little meaning to them.

5 months after he was diagnosed and doing ABA for 10 hours a week (privately funded), we discovered Floortime and the DIR Model. We were lucky we had a qualified and certified Occupational Therapist in Perth who lived and trained in the USA .I attended a Parent Training Program which was 2 hour lectures for 8 weeks. This included the theory of the DIR approach as well as sharing practical experiences by watching videos. I found both the theory and practical side of the DIR model equally important. I then did the online DIR conference in which there were more than 20 hours of lectures and videos. This only highlighted the depth of knowledge that is required in the DIR approach to treating children with any disabilities including ASD.

On the surface, Floortime may look easy as it really involves playing with the child but it's harder than it looks. The training that I have done has helped me understand the natural development of humans in all aspects. All children with or without a disability have a unique profile. The DIR model breaks down the developmental stages into 6 basic levels but also incorporates sensory processing such as auditory, vestibular, motor planning, visual, tactile etc. When doing Floortime , the child has to think as opposed to us teaching him/her a specific skill. There are still goals to achieve in each activity and their learning is encouraged through playing. It is child directed and hence, the reward comes from having fun playing a game that the child initiated. This helps the child progress through the developmental levels that mirrors the natural development

of any child without a disability. The DIR model recognizes that children with disabilities follow the same developmental pathway but at a different rate. Since doing Floortime, the biggest reward for us is our growing relationship with our child which existed at a very basic level initially. Before Floortime, he would come to us as parents for instant rewards which was mainly food. Now, with Floortime, he seeks our attention to play. Needless to say, we are very passionate about Floortime. It has helped me understand his difficulties with attention and engagement as well as non verbal 2 way communication which are the early stages of every child's development. I am always working on these foundations as well as his other difficulties in sensory processing, motor planning and self regulation. I understand the need for gross motor activities to improve his muscle tone and coordination at the same time regulating his behaviour. For example, he likes climbing upside down which involves stimulating his vestibular system. I understand what upsets him and his anxiety as well as what to do to calm him down. In a way , I understand his world.

Our major current issue is schooling. He is not ready for mainstream school and needs a lot of 1 on 1 attention. Although schools may provide an aide, I feel if there was a Floortime school like there is the USA and UK, I would definitely enrol him there. Of course, the main goal is still for him to fit into mainstream society and to be indistinguishable from his peers but the foundation is important which we are working on with the help of Floortime.

Floortime has helped me tremendously as well from a professional point of view. It has helped me understand individual differences in my paediatric patients and on the lookout for any disability, not just ASD. The theoretical knowledge I have gained from my readings (e.g. Engaging Autism by Dr Stanley Greenspan) and training has been invaluable. To me , the developmental stages make sense from a medical point of view (Dr Greenspan is a Psychiatrist). In terms of evidence based medicine and double blind controlled trails, there will always be flaws when it comes to assessing behaviour. ABA has been around for a long time and has had some research backing it. Floortime research will and is catching up.

DIR stands for Developmental, Individual difference, Relationship based. To me, this is a holistic view to treating a child with many difficulties. It helps us to understand the child's world as much as the child understanding our world.

The following is written by Robyn Meech, Ph. D. Mum to Sophie, 18 months old

As a parent of a young child and a health sciences professional (biomedical researcher), I would like to provide my anecdote in support of the Floortime/DIR approach to treatment of ASD. My daughter was a happy, playful, and engaged baby but began to get off the normal developmental track at about 13 months of age. By 15 months she had regressed losing communication and other skills and was given a diagnosis of 'at risk of' ASD and a developmental language disorder. She was assessed by a paediatric neurologist, psychologist, and psychiatrist and

all stated that she had serious delays and needed immediate early intervention. In California where we live at the moment, the government provides early intervention services knowing that an earlier start leads to better outcomes and fewer burdens on the education and health care systems in the long run. Our method of choice was Floortime. I can best summarize our reasons for this using the quote from Greenspan below:

“At about 13-18 months, we should begin to see the emergence of a complex sense of self, manifested by the infant’s attempts to organize complex emotion and behavior to convey a distinct intention or need. In an early diagnosis of autism/PDD, the first sign of trouble is often that this stage is missing. For example, instead of signalling to Mommy that she wants to have the toy or cookie that’s out of reach, the child may withdraw, become perseverative, or tantrum while the parent searches desperately for the un conveyed reason. In most children, synchronous patterns of movement support this early communicative engagement with their caretaker, but in children developing the autism/PDD syndrome this meaningful flow of movement will be absent. These early markers of a serious developmental problem can usually be observed, and intervention work begun, by 14-15 months”.

This precisely described the situation with our child (and many others with early onset ASD symptoms, regressive or otherwise). It wasn’t just that she lacked ‘skills’ (which might be able to be taught by a behavioural approach), it was that she lacked engagement with us as parents and the ability to maintain a flow of reciprocal interactions. And without engagement we felt that she couldn’t acquire skills (including communication skills) in a meaningful way. So while awaiting the government services, we began an intensive program of Floortime at home with regular consultation from a professional who was trained in this technique.

The results have been nothing short of astounding. At 15 months of age our child did not respond to her name, did not imitate faces or actions, and did not have any functional means of communication at all (no gestures or words). She made no eye contact, had little interest in interacting with us, and spent much of her time absorbed in simple, repetitive play with objects. She had irrational fears of open spaces and loud noises and frequently screamed and flapped her arms in distress. She was sometimes aggressive, pulling hair and biting, and had no ability to recognize emotions on faces. At 18 months of age, after 3 months of daily Floortime, she has truly re-engaged us. She seeks us out for play, makes eye contact frequently, and is learning rapidly through imitation. She now has a few words, several signs, and she gestures (points and waves) constantly. She seems to be overcoming her motor planning problems and show more and more abilities daily. She rarely shows aggression and generally treats us as people that she loves and wants to interact with. Now we are more appealing to her than objects! She is quite simply a different child. With her new found engagement (with us, her peers, and the world in general) she is moving back up the developmental ladder at a rapid pace. Other parents who observe her now do not see obvious differences between her and her peers and we hope that it stays that way. We have come to think of this as a rescue project and it is succeeding.

Obviously not all children will make such rapid progress, it will depend on their individual neurological challenges, and in particular, how profound their sensory processing problems may be. We were fortunate that our child's issues in the latter arena were not too severe. We were also fortunate to have begun so early after her regression. But I think that for virtually all children with ASD, this ability to engage with people is just latent, not lost.

I have also had the opportunity to do a little comparison between Floortime and ABA. The government funded early intervention program (California Early Start) uses primarily ABA-practitioners although they have one Floortime service provider. Unfortunately, demand for the latter (especially for very young children) is so overwhelming that they had to put us on a waiting list. So for the moment we are only receiving visits from an ABA speech therapist. She comes to our home for one hour per session and attempts to get our child to: 1. Match puzzle pieces, 2. Put shapes in a shape sorter, 3. Point to named objects and pictures, and 4. Sound out letters and words with her as she reads. At the end of the session she checks off the boxes for these skills on her report sheets. Our child is actually capable of most of these things when she initiates and we incorporate these skills into playful reciprocal exchanges during Floortime. But with the therapist she is expected to simply 'do as requested' and is understandably bored and uninterested. Moreover, the therapist often uses 'hand-over-hand' to ensure that an action is done. Our child dislikes this and sometimes pulls her hand away or just looks away and tries to tune-out what the therapist is doing. I really don't know what the therapist thinks she is teaching with this approach – compliance maybe? If so, it's not working! If this was the only approach we were using I know that our child would not have made the progress that she has. With Floortime she now tries to communicate because she WANTS to; she seeks us out to play because she ENJOYS it. These activities are their own rewards because they make her HAPPY and don't have to be paired with external rewards as part of a program to 'train her'.

In summary, I cannot speak highly enough about the value of a developmental, relationship- and affect-based approach to helping children with ASD. I also cannot say enough about the importance of starting as early as possible. So what about access? We have been able to implement Floortime intensively because we have one stay-at-home parent. We can also afford to pay a professional for regular consultations. If this were not the case we would not have been able to make the progress that we have and I am sure that our child would still be 'in the dark'. But even with our advantages, we are exhausted! Floortime may be at its most effective when carried out by loving caregivers, but they need a break sometimes. If we could have received regular visits from a Floortime therapist under the California Early Start program we would have been ecstatic because it would have given us some respite. When we return to Australia next month we will continue to do our own Floortime and most likely pay a private consultant. But we desperately hope to hear that the Australian government will provide the same type of early and intensive intervention programs that are available in the USA, and that Floortime will be a supported therapy. I am also enormously concerned for those families where both parents must work and the budget for special services is tight, and thus who don't have

even the opportunities that we had. I worry that there are children that could be pulled back into the happy world of relating, learning, loving, and developing both cognitively and emotionally through Floortime, but are not getting the chance. From a humanitarian standpoint I think this is tragic, and from a practical standpoint I think it will lead to overwhelmed educational and special support services down the road. If 1 in 166 children are truly now 'on the spectrum', we must find ways to make effective treatment accessible to them all or the societal burden will be profound.

Thank you for reading my story.

The following is written by a mother from Perth.

I am a mother of 3 boys, aged 6, 4 and 2.

My eldest child was diagnosed with ASD when he was 4 years of age. At the time he was attending kindy part-time, was not interacting well with the other children, could not cope with a change in routine and would wander around the playground quoting passages from TV/video/books. My son could be described as having a 'mild' form of ASD, in which the primary concern was and is his social and emotional development. Although this may seem trivial to some, to me this was quite devastating. I have always placed the ability to interact with others, have empathy, resolve conflicts etc. as far more important than other abilities such as academic or sporting abilities. To me they are crucial to ensuring a happy life.

At the time of diagnosis, my husband and I were told that we could select from 2 public treatment options. We could elect for behavioural based therapy or we could elect for the traditional therapies of Physiotherapy, Occupational Therapy, Speech Pathology and Social Work which was provided by a publicly funded centre specifically set up for children with autism. My profession is in Occupational Therapy and although I had worked for many years in paediatrics, I had had virtually no experience with children with ASD. This did mean however that I was already familiar with the behavioural approach and after just one conversation with the liaison officer from this organization, I knew that I was not interested in using a behavioural approach with my son. This left us with the second option of the traditional therapies, which we decided to try. My son was assessed by an Occupational Therapist and a Speech Pathologist whilst I was interviewed by the Social Worker. They asked me what my concerns were and took note of those. However, they then explained to me the nature of their programme and how my son's needs could fit into their programme. This meant I had to withdraw him from school for 3 afternoons per week, during which he would attend the centre for group sessions with children who were all lower functioning than he was. During his time there he would develop his fine motor and language skills, but there was no opportunity for him to develop his social skills, which was of a far greater need. After 2 of these sessions, I withdrew from the programme. It was clear to me that there was nothing available in the

public funded programmes that were going to help us with our son and time was ticking on. It was now 9 months since the diagnosis was suspected and 5 months since the diagnosis had been confirmed.

We decided to research the private therapy options available to us, and upon deciding on a certain private practice, it became very clear to me that this was exactly what we had been looking for: A relationship based programme using the DIR model, in which our son could have practice relating to his peers under the guidance of a highly skilled therapist. More importantly, we were able to gain a far greater understanding of how children develop socially and emotionally and we now know how best we can support our son on a daily basis. This knowledge is invaluable. Our son is now able to make eye contact with adults at times, he will initiate conversation with others, he is starting to think of others at times, he is not at all perturbed by a change in routine and he rarely quotes TV/Video material. He is a happy, intelligent child who excels in sport and maths, loves music and feels happy and safe at school.

I hold a strong sense of hope that our son is going to make it and he will be OK. Without this service, I know that our family would be feeling despair and a sense of hopelessness.

I feel it is absolutely imperative that a publicly funded DIR model of service is available to all children with ASD in Western Australia. I am confident that for many families of children with ASD it would be their first choice, and it should not be denied them, simply because they cannot afford to pay for a privately run service. It really can make an enormous difference to people's lives!!

Written by a parent, Ann, from Adelaide - Alex's Story

My beautiful son came into my life (prematurely) 5 years ago. As time went on it became obvious that his developmental delay was not solely due to his prematurity.

What started to concern me was that my son did not want to be around me, Not only did he not care if I was in the room or not, but did not WANT me near him.

Children develop self regulation within the first 3 months. He could not self regulate - he was still having meltdowns at 3. They develop engagement within 6 months. I could not get him engaged with me. A baby is engaged with their mother, looks at her, smiles, I didn't have that. Two way communication develops. That back and forth of sharing a look, a smile, giving you something so you can make it work whilst he is still engaged with you. NONE of that was happening at 3.

I was introduced to DIR Floortime when he was about 3. His therapist and I began using these principles. I began to get those things (engagement, 2 way gestural communication) that I was longing for. I can't go back now. He now looks at me and smiles. He now knows what it is like to have fun, but more than that he knows what it is like to have fun in relationship with me. I shouldn't have to go back to not having that.

His younger brother (Chris) has been patiently waiting for his playmate to emerge. This has started to happen. It is a real delight to watch Alex initiate an interaction and Chris looking at him and me excitedly as if to say 'wow, he wants to play with ME!'. This has made Chris want to initiate back, now knowing that his requests are likely to be reciprocated instead of being rejected. Alex also initiates these interactions with other typically developing children, but an adult needs to be there in order to help facilitate that interaction the moment it occurs, so the opportunity is not lost.

Currently, DIR(R) Floortime(TM) is not offered publicly as an early intervention option. What I like about this model is that it looks at the child's individual processing differences and understands that there is more to it than what behavioural approaches are able to address. If a child doesn't have (or is unable to form) a relationship with his primary caregiver and family, surely, logically, that is what needs to be addressed first - not skills. DIR(R) Floortime(TM) needs to be available for all children with special needs to access freely. Everyone seems to agree that early intervention is the way forward - Providing the means for all children to reach their optimum potential is our responsibility as a society.

I have found that the education system is unable to provide the opportunities vital for Alex's emotional development. This has led to myself and other parents forming incorporation - Parents 4 Kids. Parents 4 Kids was started by parents who are disillusioned by the current education system. Our aim is to be able to continue to build on the gains our children have made with DIR(R) Floortime(TM) throughout their school life. The only way to do this is by having a DIR(R) Floortime(TM) classroom. An environment and methodology that not only understands the emotional developmental level of our children and their individual processing differences, but understands the importance of relationships. Without relationships our kids will never be able to reach their full potential.

Written by a parent from Sydney - Ethan's Story

When a child is given a diagnosis of "Autism" or the child falls on the "spectrum", it can be the most difficult time for parents. Whilst receiving the diagnosis is very hard for parents to process and accept, it is only the beginning of the journey and the impending decisions that must be made regarding the

“best” treatment. Every parent wants the best possible outcome for their child, therefore this is the most difficult of decisions.

After countless hours of reading, talking to professionals, parents and anyone else that had an opinion, we opted for DIR/Floortime as one of the therapies for our son. Ethan, our son, has a wonderful, warm nature and our goal was never to change that in him, but to help him with the challenges that Autism has given him. We felt that DIR/Floortime was most conducive to this goal.

Since beginning the weekly sessions, we have noticed Ethan become more interested in his surroundings, more interested in “playing”. We have learnt ways to interact and play with Ethan that keeps him engaged in the activity. We have been given tools to deal with specific behaviours that are a challenge for Ethan.

The most rewarding experience for us as parents to date, is seeing Ethan and his sister play together for long periods of time. They imagine, pretend and play together, they also argue. This is surprisingly rewarding as Ethan is expressing his point of view. I believe that this has been enhanced with our daughter’s attendance at some of the sessions. This has been very important for us and our daughter as she often gets “left behind” whilst attending to various appointments and was feeling the stress and anxiety we felt. Finally we have been recognised as a family, and our daughter has been included. I believe that this will enhance their relationship as brother and sister, but will also give Ethan some valuable tools that are not easy for a child with Autism to learn.

Written by a mother from Adelaide - A Floortime Story

I am the mother of a 4 and a half year old boy, who's been diagnosed as mild to moderately autistic by a private child and family psychologist in July, 2007.

At the time, the psychologist told me about ABA, and a programme run through a local university. She told me how successful this has been. Other than speech therapy and occupational therapy, which had already been offered to us through Government Services, before Thanasi's diagnosis of Autism, no other type of intervention was mentioned.

I began to research ABA and put my son on the (VERY LONG) waiting list for the University programme...private ABA therapy is extremely expensive, and not really an option at this time. The more I read, the more I heard from people involved in the programme, the more I became worried. A lot of the material written about ABA gave me the distinct impression that if my son did NOT receive ABA therapy, and DID NOT attend a mainstream school, he had no hope of a decent, fulfilled life!

I started to look for other teaching methods and intervention philosophies, as I felt strongly that ABA was not for us...in fact I believe my son would not only be unhappy attending these sessions....he would not even be CAPABLE of taking in anything delivered in the style of ABA. But this was quite scary for me, as I felt as if I was going against what had been advised for my son. Of course I worried that I would be depriving him of his chance at a 'normal' life, if I chose not to attend the ABA sessions. You can imagine, this is the last thing I would want for my son!!

Eventually, I met a couple of wonderful therapists, both Occupational therapists, who worked with my son...got to know us both very well...and they both kept telling me about a particular speech therapist, and how they thought she would be great for my son. I went to see her, just to see if she thought Thanasi was ready for speech therapy.

I knew that she was the one for us right away. I left her place that day KNOWING she was going to change our lives. This speech therapist, practices Floortime, and the more I learned from her about Floortime, the more I realised, not only that we'd been following these ideas since Thanasi was born, at home, without realising, but how absolutely RIGHT for us this intervention model is. Each session is a joy, and I see real results....not after weeks of work, but every time our speech therapist says 'Try this'...or, 'Say that THIS way'....

I believe this early intervention model is a total therapy for any autistic child, no matter how mild or severe. I recently completed the on-line course offered by Stanley Greenspan. After viewing these lectures, I realise Floortime should be followed for EVERY child's healthy development, not just special needs kids. It has so much scope for use with different disorders...but really, to me, it's just a common sense approach to developing healthy children, and helping children with special needs to be their best.

Even though we haven't been doing Floortime for very long, I have already seen how it has helped my son with engaging with other people, sustaining the engagement and eye contact, he's using words more meaningfully....but more importantly, I can see that Floortime is the way forward for my son, Floortime is going to help my son to be calm and happy, to be ready to learn, to be able to think in an abstract way, to genuinely socialise with other kids....it's going to improve his quality of life no end! I feel that the Floortime approach is the only way for my son to achieve all this, and more. It is the only approach I feel completely, comfortable with.

There must be more awareness of DIR Floortime as an intervention therapy for autistic Kids. There must be training for professionals, and funding for parents. Parents really need to have choices for their children, we are all individuals, and it is SO important to have support for your choices...what more important choices are there than choices about our children's lives?

Written by Gloria, a parent from Adelaide - Sidney's Story

Our delightful son Sid was initially diagnosed with a severe language disorder and moderate sensory integration disorder when he was 2 years old.

Inclusive Directions provided support to the child care centre staff, where he attended 2.5 days a week. Typical occupational therapy and speech therapy was accessed to support Sid's development. Sid seemed to enjoy OT and as parents this helped us to better understand his sensory profile. Sid struggled to engage in traditional speech therapy and we both often found these sessions very stressful.

I wish I had discovered a DIR Floortime specialist back then.

At 4.5 years Sidney was diagnosed with Autism. We did not therefore access the early development program available via Autism SA but he was accessing a DECS kindy program with additional support as well as inclusion support in child care from Inclusive Directions. These programs offer Sid consistent staff to build relationships with and help him access the programmed activities. They have been supportive to our family.

We have been working with our speech pathologist using the DIR Floortime method for the past 6 months and have noticed a significant improvement in Sidney's functional language and social skill development. This has been noticed by family and staff at the centre. As parents we can see that Sid is "filled up" by this experience, he enjoys going to the sessions saying 'so funny at Dana's' and is spontaneously initiating play experiences. He is also more engaging generally, expanding his play skills and symbolic use of objects. He is also beginning to expand and link ideas spontaneously with husband and I during our Floortime sessions at home.

I recently had an opportunity to attend a 2 day introductory workshop on DIR Floortime in Adelaide. Kathy and the parent speakers were inspirational. I have now joined the parent group to advocate for a Floortime classroom and promote this methodology in my work for Inclusive Directions and in my early intervention networks.

Recently Sid turned 5 and we considered sending him to school but are completely disillusioned by the lack of appropriate support in the mainstream environments. We are committed to our son's social and emotional wellbeing in an inclusive setting and want an educational environment that promotes his learning in a holistic sense. Therefore supporting his individual difference and learning style as well as building on relationships with consistent adults and children.

Written by a parent from Sydney - Comment on the DIR Method for treating ASD

I have been involved in my 2-year-old daughter Sophie's autism treatment since our first ASD and Global Developmental Delay diagnosis in December 2007.

My fiancée and I began ABA treatment for our little girl; we believed this was the only form of treatment available that showed results.

This was incorrect, our daughter suffered what we believe was a panic attack through one of the sessions of ABA and my partner and I began to investigate other treatment options. We have been involved in the treatment of Sophie in DIR/ Floor time principles since April of this year and in 6 short weeks the results we are seeing are so encouraging in terms of Sophie's eye contact, joint attention, motivation and most importantly her connection with me in seeking me out to play with her, and the connection that she has been able to form with our DIR therapist.

This DIR program has empowered me with ways to play with Sophie that is therapeutic and fun enabling me to put more hours into the treatment without suffering burn out and therefore increasing the results.

Kate has been to date the best-resourced and most knowledgeable therapist that we have had in terms of treatments. This therapy is all-inclusive; we are offered emotional support as well as coaching with numerous courses being offered and parents being encouraged to attend. This extensive learning has enabled me and my partner to feel in control and a part of the progress that Sophie is making.

DIR has enabled us to better read and understand our daughter, and use this to unlock her abilities and teach her new skills. DIR will form a major part of our therapy given the success that we have had with it.

Written by Annette, a parent from Adelaide - The Value of DIR®

We as a family strongly value DIR/FT as the relationship component with our son is the main priority in his life - just the spontaneous eye contact and the infectious giggles and smiles he gives us everyday are invaluable. It is a long journey in building the foundation but can't stress how imperative the support we get from our DIR/FT therapist is.

We have started DIR/FT when my son was 4 and see a therapist weekly. We incorporate Floortime whenever possible daily.

I as a mother have also completed a DIR training workshop so I can implement the practical side in everyday living but having said that I feel it is also important

and enlightening to continue seeing a DIR/FT therapist as my child is constantly growing and developing.

I feel DIR/FT offers a core in the child's development in a social aspect which from there stems to many other areas in their growth and learning. Without this foundation my son would be a very self absorbed little boy without much opportunity in learning from what life has to offer. I feel DIR/FT has not only shown me that my child is a boy which spark and life but also has given me to confidence to enter at the same level of my son.

I can't stress enough how strongly I believe DIR/FT is vital for early intervention for my son and also for the many other children. - I just wished that this was an option for him when he was diagnosed earlier at 2 years of age and maybe with this in mind children currently receiving a diagnosis will be enlightened and have DIR/FT as an option for early intervention.

LITC

APPENDIX 3: DIR Australian Based Resources

Updated July 2010

For recommendations of Australian Professionals with DIR® Credentials recommended by ICDL the DIR® Training Body please refer to the ICDL website www.icdl.com which has information about DIR professional (international – Australia)

There are a growing number of professionals who have participated in introductory level DIR trainings either regionally or online and this participation provides a first step. DIR is a comprehensive intervention approach, and Floortime is a highly nuanced and complex intervention tool. There is an well established and authorised certificate training program and professionals undertaking this training need to show a range of competencies in DIR/ Floortime. This comprehensive training takes a minimal of 3 years. Individualised reflective supervision is an essential key component and requirement in order to develop competencies to practice as a DIR professional. Professionals undertaking DIR certificate training develop mentoring relationships with DIR faculty or facilitators not only from their own discipline but from a number of other disciplines during the course of their training. Although travelling to the US can be prohibitive cost wise, there are a growing number of professionals in all states of australia who are pursuing distance tutoring and reflective supervision with ICDL faculty and facilitators from the Mental health, occupational therapy, speech and language pathology and education fields. Technology means that this is now readily an accessible option for professionals and distance or remoteness is no longer a barrier in pursuing professional development opportunities.

Given that there is a credentialed certificate training program for DIR , professionals are encouraged to represent their level of training in DIR /Floortime carefully and accurately to the public and parents. Parents who are keen to access DIR /Floortime services are also encouraged to actively check the credentials of service providers . If parents are unable to access a DIR provider that is listed on the ICDL website, it is recommended that they ask professionals who are reporting or advertising tht they are using this approach for information about whether they have a mentoring relationship with DIR® certified professionals.

Floortimers Australia list serve

In February 2007, an e groups internet list serve was created with the goal of being a vehicle to enable networking and informal support networks for both parents and professionals using and learning about DIR® and Floortime. This currently has a

membership of over 250 persons including those located in all States and Territories and can be accessed at <http://au.groups.yahoo.com/group/floortimersaus/>

Parent Support Groups:

At this current time we are aware of the following established groups:

Perth : Learning Tree & Sensory Connections Floortime Parent Support Group -
Contact for this group is Kathy Walmsley at kwalmsley@sensoryconnections.com.au
Parent contact is Linda Payne at lindap@corporatecomputers.com.au

Sydney : Kidsworld Therapy - contact is Georgina Ahrens at
georgina@kidsworldtherapy.com.au

Adelaide : (Contact is Ann Mohler on) ann.mohler@hotmail.com

DIR professional networking groups:

These groups consist of professionals who are undertaking DIR certificate training or who have an interest who meet on a regular basis to share and discuss their cases with peers and colleagues. One of the goals of these meetings is to build DIR ® networks within local communities. At this current time (2010 July) to our knowledge there are three groups running in Australia.

Perth group :
Facilitated by Anne Nunn, SLP – contact is anne.nunn@optusnet.com

Sydney group :
Facilitated by Georgina Ahrens , OT - contact is georgina@kidsworldtherapy.com.au

Melbourne group:
Facilitated by Cathy Horder, OT – contact is cathsot@bigpond.com