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The Child's Triangle.

The **Individual** the brain differences, sensory motor and relationship differences how we scaffold and challenge those differences in the **Tasks** we provide the **Environments** we create and within **Relationships** we co create. We become aware of the way we behave relate and engage with the child (DIR) taking into account his/her individual sensory processing and motor profile.

Tasks are generally viewed from their functional or achievement perspective i.e. whether or not the task is completed successfully. The emotional experience around tasks in the context of relationships is not generally considered. How we affectively interact will impact the effectiveness of the tools we use. Our affect is equally as important as the sensory input we provide.

A key learning outcome for this evening is to understand the importance of relationships and how we can calibrate ourselves to support the child's individual differences to enhance development.

The DIR model i.e. The Developmental Individual Difference Relationship based model of Dr Stanley Greenspan and Serena Weider.

The DIR model takes the child's developmental level into account and emphasises individual differences in the child's processing and expression of emotion as well as cognitive and sensory motor domains. Affect or feelings are given considerable prominence in this model. Intervention occurs in the context of the child's relationship with the parent, teacher, carer or therapist which is believed to stimulate cognitive and social emotional development. Interactions with rhythm and reciprocity are the key to supporting development.



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Affect facial expression tone physical action and gesture is the glue for functional emotional development. Dr Greenspan would say **sensory input** Proprioception, Touch, Movement in our **physical interaction** and Visual and Auditory in our **affective interaction** is the glue for neurobiological organisation but the two are so totally intertwined it is not one without the other and that is so important to think about that sensory piece and how we calibrate ourselves to organise the child's central nervous system so they can continually move up the developmental ladder. Warm pleasurable feelings that come from human interaction serve as reinforcement for learning rather than tangible rewards.

Level 1: 0-3 months Use the child's individual sensory and motor profile to help the child stay calm and regulated in order to draw the child into shared attention. The components of shared attention are a **responding gaze** that is when the adult/therapist woos the child and basically opens a circle of communication then the child responds with an eye gaze, **an initiating gaze** is when the child begins to open circles and **alternating gaze** is when the child shifts visual attention between the adult/play partner and the object and then back to the play partner. Pointing, showing, vocalizations and words are also involved in joint attention. Joint attention is the ability of the child to be engaged with an adult about an object a person or event. **Interest in the world is step 1 in academic learning.**

Level 2 Engagement 2-4 months Woo the child into engaging with pleasure seen when the child brightens, smiles, moves vocalizes or reaches. As the child develops Engagement deepens the relationship to include the **full range of feelings** such as assertiveness, anger or sadness. **Pattern recognition which come from emotional interaction are necessary for reading writing maths sound pattern all depend on pattern recognition.**

Level 3 (6-8months) begins with a dialogue without words through subtle facial expressions, a gleam in the eye and other emotional signals or gestures to a dialogue with problem solving words. **Back and forth** (continuous flow) emotional signalling exchange of vocalizations back and forth with mammy Happy Sad curious surprised the different facial expressions that go with that sound that is the beginning of language development. Simple gestures used in the first year the give and take peek a boo develop into complex gestures



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2nd year and serve as the back and forth conversation in language. **This is the first step in causality.** Before you can use ideas and before you can use words you learn that the world is a logical place and you can make things happen. This is another important step in academics.

Level 4 (9-18 months) the child has an idea shifts from the back and forth into a thinking being there is a because. The child takes Daddy by the hand walks to the door and points he wants to go outside and maybe vocalizes a sound or a word to further understanding of his intentions. Can we encourage dialogue about what is wanted? Expand conversations as the child develops.

Causal thinking is a critical step in academics in order to understand what you read or maths. The child who memorises or rote learns is not learning to think. Words and sequences only have meaning to the degree affect is mediating them. The child needs many emotional experiences with images before symbols develop. Symbol formation is very important for academic life-maths, science.

Level 5 (19-30 months) In Pretend play the child can come up with an idea, does not hit out but can say “I am mad” the child can link feelings to behaviour and raise feelings to the level of ideas.

Ideas have to be connected to affect to be meaningful otherwise the child is more of a scripiter. Pretend play is critical for creativity. Creative thinking is necessary in order to read and elaborate and understand maths. The child achieves understanding concepts through play with Mammy and Daddy. Symbols then give the child a simpler way a common language.

Level 6 (3-5 years) The child becomes a logical thinker stories have a beginning middle and an end and elements in the dram fit logically together motives are understood and the child can put himself in someone else’s shoes. The child can make connections between differentiated feeling states e.g. I feel happy when you are proud of me”. Who What Where and Why questions are now well established.



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Sensory Integration: Si is the neurological process that organises sensation from one's own body and from the environment and makes it possible to use the body effectively in the environment. SI is how input comes into the CNS (central nervous system) through various sensory channels and then gets integrated together to give a meaningful whole to our experience in the world.

Si is not just about simple tasks to influence the sensory systems but a key learning outcome is how within a relationship you use these tasks or strategies. Si results in **Modulation and Praxis.**

Touch: Cells in the skin send information about light touch pain temperature and pressure.

Proprioception: Components of muscles joints and tendons provide awareness of body position.

Vestibular: Structures in the inner ear detect movement and changes in the position of the head.

Auditory: Sound sensation and making sense out of sound in space What and Where.

Visual: Also a What and Where system.

Taste: The kinds of foods the child likes e.g. bland foods or foods giving a lot of sensory input.

Odour: Smell

Sensory Processing involves the child's ability to process sensory information from the Proprioceptive Vestibular Tactile Auditory Visual Gustatory (taste) Olfactory (smell) systems in concert with their ability to maintain regulation Impacts how the child experiences the world interacts with others and learns.

Attention (homeostasis) > focused attention to salient stimuli with habituation to extraneous stimuli. Engagement in affective interaction is used in order to bring the child more into homeostasis which is where they can attune to the salient or the most important stimuli in the environment.



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Dual coding: The affective cues we experience around a sensation will influence our perception of the sensation so what you perceive emotionally is perceived as a sensation they are 2 sides of the same coin neither occurs without the other.

Praxis is the moment where we project in the future what we are going to do and that projection forward comes from what all our experiences have been beforehand not only our physical experiences but the emotional context in which we had those experiences.

It takes in the uniqueness of the individual. Executive function i.e. the cortical structures (and how I visually understand the world how I develop my visual cognition how I look at things and work out from my visual acknowledgement of them what meaning that visual stimulus has had for me.) Executive function is essential for Praxis the pre frontal cortex orchestrating information for function. What does that mean? It means Praxis contributes to organisation of self interaction with people and objects it is the end product of how we operate within the world?

Components of Praxis

- Ideation i.e. knowing what to do
- Motor planning i.e. knowing how to do it
- Execution i.e. carrying out the planned sequence of actions for the task

Problem can be the result of a

- deficit at the higher cortical function
- Inefficient subcortical function in integrating different sensory information to enhance the development of the body scheme for motor planning.

Body Scheme: It is an unconscious mechanism underlying co- ordination of the body in space that provides the CNS with information about the **relationship of the body and its parts to environmental space.**



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Tactile Protective System:

In tactile defensiveness the Anxiety system especially within the Limbic structures and others are not adequately modulated or inhibited by higher structures such as the Cerebral Cortex.

The Discriminative Touch System:

This system enables us:

- Locate where touch occurred
- Identify objects through touch
- Fine Motor skill pencil buttons
- Body postures PE
- Articulation

The Proprioceptive system: Exquisite system gives us a unique perception of our bodies. **It tells us where each part of the body is and how it is moving.** This system makes it possible for a child to skilfully guide his arm or leg movements without having to observe every action. When Proprioception is working efficiently an individual's body position is automatically adjusted to prevent falling out of a chair. Proprioception also allows objects such as pencils, buttons spoons and combs to be skilfully manipulated by the hand. Because of efficient Proprioception, a step off the curb is smoothly synchronised with the following step on level ground.

Vestibular system: The vestibular system gives information about movement of the head within space also the orientation or position of the head and body relative to the gravitational forces of earth.

A more easily understood definition is as follows: The Vestibular system responds to body movement through space and change in head position. It automatically co-ordinates the movement of one's eyes, head and body. If this sense were not functioning well it would be impossible for a student to look up at the blackboard and back down at her paper without



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losing her place. It would be difficult to walk along a rocky path without falling, or to balance on one foot long enough to kick a soccer ball. The same vestibular sense is central in maintaining muscle tone, co-ordinating the two sides of the body and holding the head upright against gravity.

The interconnectivity of the vestibular system with the somatosensory system (Deep Touch and Proprioception) and the visual system allows us do many things in relation to the efficiency of our bodies movements.

The Auditory system What and Where system We know where a sound is coming from Once those sounds reach the cortex they go to a part of the cortex called the Temporal Lobe at the side of the brain a major auditory processing area. Words are an orchestration of frequency of sounds that get put together and have meaning based on our memory and our experiences, words have meaning based on experience.

Think about the evolution or development of language frequency of sounds into meaningful words into meaningful sentences and language.

- The auditory system helps us orient to the surrounding space and navigate through e.g. find Mammy in space. The vestibular system orients the body in space.
- There can be a difficulty to modulate sound.
- Difficulty attending and drawing meaning from sounds difficulty distinguishing foreground from background.
- More than words we look at language as a full rich component of development. Non verbal gestures reciprocity. The child having understanding of his own actions. Oral praxis problems often limiting the ability to formulate the often subtle motor plans for facial expression severely compromise the basis for social exchange.
- Auditory system perceives the timing aspects of sound. Vestibular system perceives and co-ordinates the timing aspects of movement.



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Vision is not just eyes but it is using our eyes in space.

Visual spatial challenges involve

- Lack of eye contact
- Not pointing or following gaze
- Poor reading of gestural cues visual
- Poor social boundaries bumping into things and poor understanding of personal space
- Poor day to day problem solving and reasoning
- Poor daily organisation and skills

Where vision gives the location and position of objects relative both to ourselves and other objects.

Vision guides our movements. To guide movements vision works in concert with other sensory systems.

Signed: Mary Mullally M.I.S.C.P.