

Making
SPACE
for Learning
 Trauma Informed Practice in Schools

Royal Children's Hospital 2021




The Australian Childhood Foundation acknowledges Aboriginal and Torres Strait Islander peoples as the traditional custodians and owners of this land and waters. We pay our respects to their Elders past and present and to the children who are their leaders of tomorrow. We acknowledge their history and living culture and the many thousands of years in which they have raised their children to be safe and strong.



Safety

The content of this training can evoke strong emotions and may trigger personal experiences of trauma. Please be mindful of your own wellbeing during this training and if you need support please ask the facilitator.



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Making Space for learning

A cartoon illustration of a boy with a backpack pointing to a whiteboard. The whiteboard lists five key components of trauma-informed practice: STAGED, PREDICTABLE, ADAPTIVE, CONNECTED, and ENABLED.

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A circular diagram with a central heart containing a brain icon. Surrounding the heart are eight icons representing different levels of the school environment: Individual student, Classroom, Staff, Whole of school, Community, and Enabled. The word 'Safe' is at the top, and 'Predictable' and 'Accepting' are on the right side.

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Consider a teacher who taught you and who had a positive influence on you,
What do you remember most about them?
What appealed to you about them?

A photograph of a wooden desk with a stack of books, a red apple on top, and colorful alphabet blocks (A, B, C) to the right.

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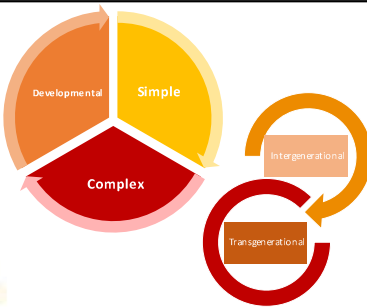
Holding the student at the centre...



Defining trauma

Any single, ongoing or cumulative experience which:

- is a response to a **perceived threat**, usually to survival
- **overwhelms** our capacity to cope
- feels/is **outside our control**
- often evokes a **physiological** and **psychological** set of responses based on fear or avoidance

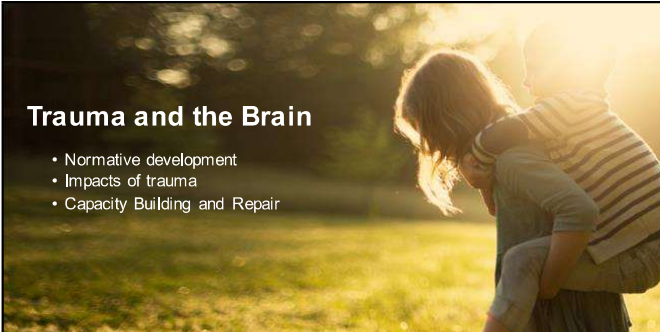



Trauma impacts

Trauma can impact all elements of children's development: brain, body, memory, learning, behaviour, emotions, relationships.

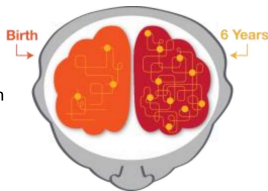
Trauma and the Brain

- Normative development
- Impacts of trauma
- Capacity Building and Repair


Neuronal connections

- Neurons – cells in our brain interact and communicate with other neurons
- The neural system has the ability for one neuron to communicate with up to 10,000 other neurons
- The newborn brain has approximately 100 billion neurons



Neuroplasticity refers to the brain's capacity to:

- Grow new nerve cells
- Strengthen connections between nerve cells
- Sprout new connections between different cells



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Developmental stages of brain maturation

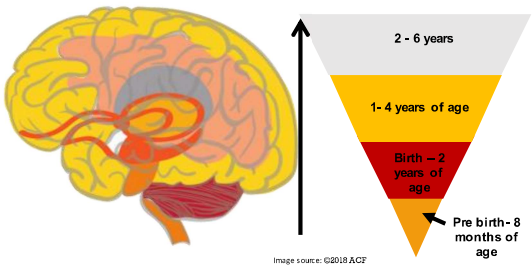



Image source: ©2018.ACF



Brainstem – survival centre

- Responsible for basic life functions
- First part of our brain to develop & the most developed brain part at birth
- Responsible for our heart beat, breathing, sucking and swallowing, temperature control blood pressure and our sleep cycle





Image source: ©ACF 2020

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The brain stem under stress and trauma

- May experience fast or slower heart rate
- Shortness of breath or breathing difficulties
- Sleep disturbances and unsettledness
- Sucking and swallowing and digestion difficulties
- May feel hot or cold or not notice changes in temperature



What do you notice?

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Cerebellum – movement & coordination centre

- Has a key role in posture and balance
- Helps us to know where our body is in space- spatial awareness
- Links to prefrontal cortex
- Responsible for our voluntary movements such as walking and writing and fine and gross motor skills
- Plays a role in **physical** and **mental** coordination




Image source: ©ACF 2020

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The cerebellum under stress and trauma

- Difficulties coordinating cognitive processes such as planning & working memory
- Difficulty in maintaining posture & balance
- Inability to undertake tasks that require balance
- Lack of awareness of their body in space
- Difficulty with voluntary movement tasks – walking or writing



What do you notice and what can you do?



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Strategies for transforming – brainstem & cerebellum:

RHYTHM, BREATH, MOVEMENT

- Include soothing and calming activities; safe containment; breath based activities
- Movement based activities
 - include activities that have a rhythmic, repetitive element
 - include activities that have a balancing element & gross & fine motor skills
- Conduct a sensory audit – ie: is it too hot or too cold, too noisy?
- Include proprioceptive and interoceptive awareness and activities



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Diencephalon – sorting and sending centre

- Develops mainly after birth
- Sorts out “messages” coming into the brain and sends them out to other parts of the brain
- Uses hormones to send signals to body





Image source: OACF 2020

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The diencephalon under stress and trauma

- Student becomes overwhelmed and cannot sort the information
- Student is unable to send information to the memory and thinking parts of the brain – that pathway shuts down
- Diencephalon alerts the amygdala which sets of a sensory information response sequence



What do you notice?

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Strategies for transforming – diencephalon

- Conduct a sensory audit
- Provide calm, positive sensory experiences
- Provide regular and predictable brain and body breaks
- Provide routine and prompts to support body systems and tuning in



What might help during transitions, beginnings and endings?

Image source: Utopia

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Limbic lobe - emotion and memory centre

- helps us attach an emotion to an experience or memory
- particularly involved with the emotions
- heavily involved in attachment processes
- develops mainly after birth
- two important brain parts – the amygdala and the hippocampus are in this part of the brain




Image source: ©ACF 2020

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Building Capacity – Limbic System

1. Co-regulating strong emotions
Validate emotion, cues for proximity/space, engage senses, prosody, rhythm & breathing
2. Enhancing positive emotions
May need help to name & express
3. Promoting emotional literacy
Teach during moments of calm



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Amygdala

- Alarm centre - the 'smoke detector' of the brain
- 'Fires' when a threat is detected – triggers a series of brain and body responses
- Stores (& generalises) implicit memories relating to fear/threat




Image source: ©ACF 2020

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The amygdala under stress and trauma

- Can be over active or under active
- Can evoke reminders and flashbacks of the trauma (awakenings)
- Will have difficulty in emotional regulation
- Will have difficulty in reading facial expressions
- Constantly 'firing' – can hijack the cortex (thinking goes offline)




What do you notice and what can you do?

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Strategies for transforming – Amygdala

- Manage own reactions (stay calm & present)
- Don't rely on reason/thinking to reduce an escalation
- Regular outbreath activities
- Provide opportunities for rest and recovery
- Environmental audit (noise, smell, colour, person, situation).



Re-entry to the classroom should be a safe and positive transition whenever possible.

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Hippocampus

- explicit memory centre
- provides context to memories
- provides consolidation of information from short term memory to long term memory
- memory puzzle sorting centre




Image source: ©ACF 2020

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The hippocampus under stress and trauma

- Reduction of hippocampal volume up to 25% as a result of high levels of cortisol
- Can't place memories in time or place – flooding & flashbacks
- Working memory, retention and recall (retrieval) capacity is severely impacted
- Narrative/autobiographical memory is affected



What do you notice?



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Strategies for transforming – Hippocampus

- Repetition
- Reminders
- Review
- Reinforce



Calming the brainstem, quietening the amygdala and boosting the cerebellum all help the hippocampus to function more effectively



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The Prefrontal Cortex- executive function centre

- Self awareness and self reflection
- Reasoning and judgement
- Foresight and anticipation
- Focusing and sustaining attention
- Planning organising and prioritising decision making
- Enthusiasm, motivation and persistence
- Impulse control
- Working memory



Image source: ©2018 ACF




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Cortical areas under stress and trauma

Unable to:

- use foresight and anticipation, focus or sustain attention
- plan, organise or prioritise or make decisions well
- reflect or have self-awareness
- be enthusiastic, motivated or persist with activities
- use impulse control



What do you notice and what can you do?

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Strategies for transforming – cortical areas

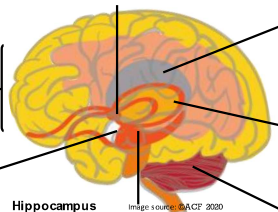
Safety and stability are essential pre-requisites for cortical access

- Problem solving activities and strategies
- Support to map and plan activities
- Games - card games – boards games, strategy games
- Voluntary movement activities – table top drumming, clapping etc
- Thinking and choice games – “Would you rather?”
- Mindfulness activities



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Trauma and the brain



Hypothalamus
Links the nervous system to the endocrine system via the pituitary gland. It synthesizes and secretes hormones to control body temperature, hunger, thirst, fatigue, sleep, and circadian cycles.

Corpus Callosum
Bridge between the 2 hemispheres. Chronic stress can damage and thin down this bundle of neurons

Thalamus
Sensory receptor within the diencephalon. Receives and passes on sensory data to be further processed by other areas of the brain

Cerebellum
Balance and coordination. motor skills may be impacted by trauma

Prefrontal cortex
Responsible for executive functions, such as judgement, reasoning, and self awareness. Final part of the brain to mature in one's mid 20s.

Amygdala
Survival response centre within the limbic lobe that becomes enlarged and more sensitive the more it is activated through responding to threats

Hippocampus
Consolidates memory by providing the context/ sequential data for episodic memories. Goes offline if trauma overwhelms and disrupts cortex.

Image source: ABCP 2020

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Strategies for transforming

| Brain area | Function | Activity ideas |
|--------------------------|-------------------------------------|---|
| Brainstem & Diencephalon | Basic survival & sensory processing | Pacification or stimulation. Activities in the child's preferred sensory modality |
| Cerebellum | Coordination of movement | Using music, rhyme and movement activities |
| Limbic | Emotional processing | Building relational connection through plays, animals, games |
| Cortex | Thinking processes | Linking experiences and sensations to words and descriptions |
| Prefrontal cortex | Analytical and abstract thinking | Challenges and safe risk taking activities |

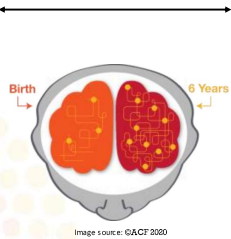
Image source: ©2018 ACF



Development of the left and right hemispheres

Left Hemisphere

- Evaluates language content
- The optimistic hemisphere
- Understands beginning, middle and end
- Learns from the past and expects the future
- Looks for patterns



Right Hemisphere

- Orientated in the present moment
- Eye Contact
- Facial Expression
- Tone of Voice
- Posture
- Gesture
- Intensity
- Grasps the whole

Image source: ©ACF 2020



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Under stress and trauma....

Young people, who have had experiences of trauma, are often operating from their right hemisphere. What do you remember about the functions of the Right Hemisphere?

It could be hard for them to:

- Understand or comprehend what we say (a left hemisphere task)
- Speak (a left hemisphere task)



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Strategies for transforming – building RH/LH connection

- Activities that cross the midline
- Using gestures, intonation, melody, etc to accompany speech
- Putting words to feelings when making observations
- Incorporate cognitive elements into calming/stimulating activities (eg. Counting)



Image source: Unplash

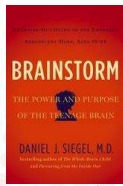


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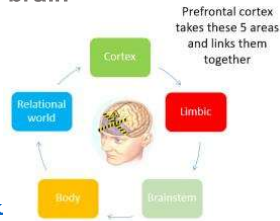
Brain development in Adolescence



Adolescents - The remodelling brain: Pruning & myelination in the teenage brain



<https://www.youtube.com/watch?v=jXpyM0ZuK>



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Synaptic formation and pruning

- Most heavily used synapses grow richer and stronger
- Synapses that see little use begin to wither
- Synaptic pruning causes cortex to become thinner but more efficient = Faster more sophisticated brain
- Throughout this process pre-frontal cortex is offline
- Ability to read emotions is lost.



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Risk taking and impulse control



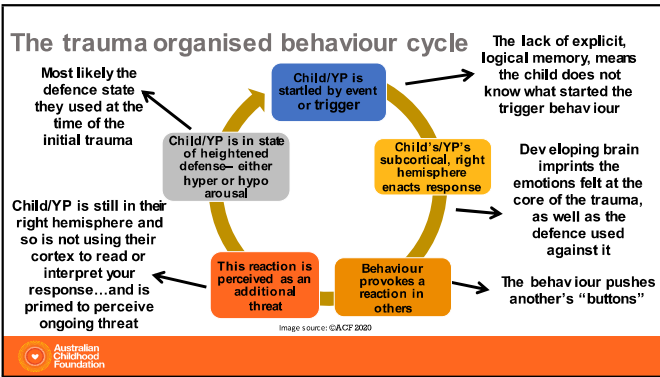
Heightened sensation seeking + Under-developed self-regulatory control = Increased RISK TAKING

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Behavioural – narratives of trauma

- Behaviour tells a story!
- Traumatized children's behaviour can be difficult and complex for parents, teachers and carers to understand, manage and shape
- However, it is functional and almost always makes sense given their specific experiences of trauma
- Children's behaviour is the manifestation of the impacts of trauma outlined in the previous sections

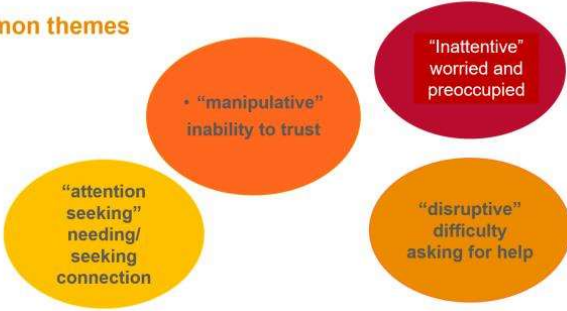
Trauma and behaviour
– adaptive to maladaptive

Trauma based behaviour is functional at the time in which it develops as a response to threat.

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Common themes



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Avoidant behaviour & shame

| | | |
|--|---|---|
| <p>Avoidant behaviour -</p> <ul style="list-style-type: none"> • Feelings of social inhibition & creation of social isolation • Inadequacy & inferiority (low self esteem) • Sensitive to negative criticism & ridicule • Humiliated, Rejected | <p>Shame -</p> <ul style="list-style-type: none"> • Being flawed and inadequate • Unlovable & unworthy • Defective and undesirable • Hopelessness • Helplessness • Shut down |  |
|--|---|---|

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The shield against shame

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Brene Brown – Daring Classrooms

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Empathy Why is empathy important? How do we learn empathy?

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Empathy Why is empathy important? How do we learn empathy?



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Complex trauma in adolescence


- *Anxiety*
- Depression
- *Dissociation & Avoidance*
- Relational & affect regulation disturbance
- Cognitive distortions
- Somatization
- Externalising behaviours such as: self-mutilation & violence
- Sexual disturbance



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Complex Trauma in Adolescence

- Substance abuse
- Eating disorders
- Susceptibility to re-victimisation
- Traumatic bereavement associated with loss of family members and significant other attachment figures
- Sleep disturbance
- Danger – not recognising or over-recognising
- Defiant behaviours
- Anger



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Multi-tiered Service Delivery Model

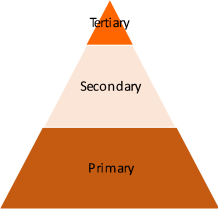
Provides effective practices for all students, and intensive support to those who need it

TERTIARY TIER: individualised interventions for students who need more intensive support – referral to external services, wrap-around support, tailored support plans etc.

SECONDARY TIER: identifying 'at-risk' students in need of targeted small group intervention – psycho-education, etc

PRIMARY TIER: preventive measures – system-wide changes to promote a safe learning environment

Phifer & Hull (2016)




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Reframing Behaviour Support Plans

Consider the **function behind the behaviour** – what is the unmet need? What alternatives could we offer the child to meet this need in a different way?

- I. Can the behaviour be understood as a **fight, flight, freeze or withdrawal** response?
- II. What **stressors or situations** do we think trigger these behaviours, and which ones can we do something about?
- III. What **skills** can we help the child/young person to develop, to support them in reducing these behaviours?

Don't rely on consequences to promote behaviour change



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Trauma and the Body

- Neuroception
- Polyvagal Theory
- Window of Tolerance
- Creating Safety



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The social engagement system



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Polyvagal theory and protective responses by Stephen Porges

| Behavioural Functions | Body Functions |
|---|---|
| Social Engagement Soothing and calming Indicates safety | <ul style="list-style-type: none"> Lowers or raises vocalisation pitch Regulates middle ear muscles to perceive human voice Changes facial expressivity Head turning Tears and eyelids Slows or speeds heart rate |
| Mobilisation Fight or Flight Active Freeze Moderates or extreme danger | Hyper arousal <ul style="list-style-type: none"> Increases heart rate Sweat increases Inhibits gastrointestinal function Narrowing blood vessels - to slow blood flow to extremities Release of adrenaline |
| Immobilisation Collapse or submission Death feigning Increased pain threshold Conserves metabolic resources Life threatening situations | Hypo - arousal <ul style="list-style-type: none"> Slows heart rate Constricts bronchi Stimulates gastrointestinal function |



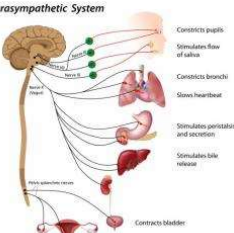
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An introduction to the Polyvagal theory and neuroception

Cues of risk and safety are continually monitored by our nervous system.

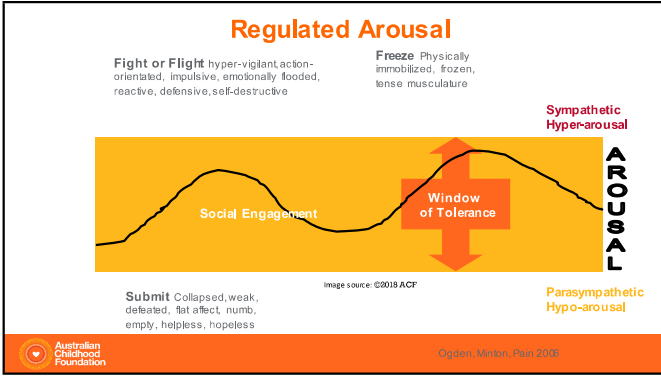
“Before we can engage in social behaviour and learning we must first feel safe.”

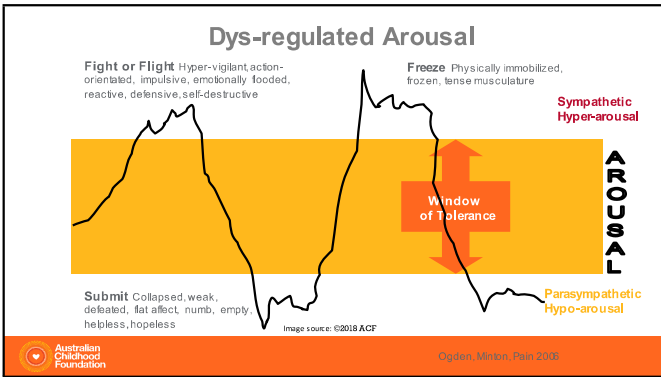
(Porges, 2015, p.115)



http://lewisinstitute.com.au/wp-content/uploads/2017/08/img_46ag9gk4.jpg

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Overshooting your Window of Tolerance:

- Upset and hyped up
- Angry and agitated
- Frustrated
- Heart beating fast
- Tense and can't think clearly
- Unable to regulate your emotions

Within your Window of Tolerance:

- Feeling safe, calm and peaceful
- Happy and able to think clearly
- Ready to learn
- Settled and content
- Mindful and able to regulate your emotions

Undershooting your Window of Tolerance:

- Sad and tired
- Unmotivated with no energy
- Feel empty and withdrawn
- Don't want to listen, talk or play
- Can't think about learning

Making Space for Learning – Action Research Project - St Thomas More School, Elizabeth Park, S.A.

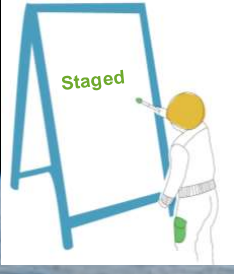
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Staged

- The knowledge base about the maturation of the brain highlights that development is sequential by nature.
- Sophisticated functions of the brain – body system only emerge after basic functions have been developed and been consolidated with rehearsal and practice.
- Strategies aimed at resourcing traumatised young people need to follow this staged pattern of conceptualisation and implementation for them to succeed.


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What might staged look like in practice?

- View student through trauma informed lens
- Identify developmental stages
- Build on strengths
- Create classroom activities that build neurobiology and neurophysiology for all students



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    graph TD
      A[Changes to the routines are a source of stress to children and young people who have experienced trauma] --> B[Brain and body are constantly hyperaroused]
      B --> C[Predictability in their relationships and environment deactivate the stress systems]
      C --> D[This then promotes flexibility and adaptability]
      D --> A
    
```

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What might predictability look like in practice?

- For students
- For families
- For staff
- Systemically

| | |
|----------------|--------------------------|
| relationships | physical environment |
| routines | instructions |
| learning tasks | behavioural expectations |

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Predictability-Supporting Regulation

Routine and cueing are your superpowers because they reduce the number of surprises a student must manage!



- Provide cues before transitions
- Simple, straightforward instructions
- Make routines explicit
- Cues can be multi-sensory

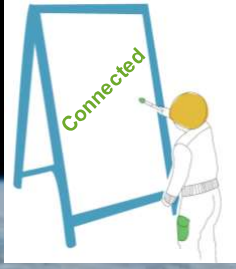


- Traumatized children and young people rely on a limited set of behavioural routines to respond to the challenges of their context.
- These routines are sourced in the history of their physiological reaction to trauma and the experiences of relationships through which these reactions were interpreted and responded to.
- Strategies which promote adaptability in children and young people are those which are able to maintain multiple meanings for behaviour and remain open to multiple options for interventions.

What might adaptive look like in practice?

- See the needs beneath the behaviour
- Utilise strengths
- Psychoeducation in classroom
- Relationship, repetition, rhythm
- Use PACE
 - Playfulness
 - Acceptance
 - Curiosity
 - Empathy





Connected

Traumatised children and y/people develop insecure and unstable templates for forming and being in relationships.

They have distorted or confusing internal maps to help them navigate intimacy.

They avoid engaging fully in relationships for fear of being hurt or rejected again.

Strategies to support traumatised children and young people emphasise relationships with safe and consistent adults and peers as the foundation for change.

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What might connected look like in practice?

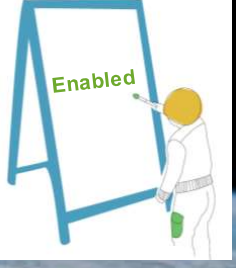
- The student feels safe and connected
- Co-regulation occurs
- A feeling of connectedness is what you get when you feel like you belong in a group, when you are with others of your
- Mirror neurons –eye contact
- Attuned listening.

"Where attention goes, neural firing flows, and neural connection grows."
Siegel 2018.



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Enabled

- Traumatised young people find the process of understanding themselves difficult.
- They are challenged in their capacity to identify their feelings, understand them and communicate them to others.
- They struggle to piece together a coherent narrative about their qualities, their attributes and their talents.
- Strategies for responding to traumatised children and y/ people in the school context will enable them to make meaning

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What might enabled look like in practice?

- Creating safety
- Understand triggers
- Map behaviours
- Victoria Dept of Ed's ABC and Scatter Plot Data
- Classroom approaches for individuals
- Flight, Fight, Active Freeze or Submit responses are assisted to enable learning.



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Making SPACE for Learning – Site Audit Tool

This audit tool can be used to evaluate the policies and initiatives of a school that restrict and equip different levels of the school structure to undertake trauma informed practice, in the following table, list strategies, policies or other processes currently undertaken that support traumatised students at your school.

Whole Site Staff Classroom / Group Small Group Individual Student / Case

| | | | | |
|---|--|--|--|--|
| S | | | | |
| P | | | | |
| A | | | | |
| C | | | | |
| E | | | | |

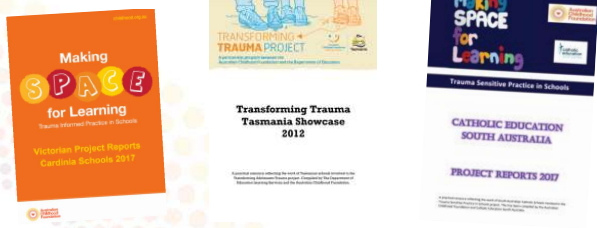
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Show case booklets

<https://professionals.childhood.org.au/building-capacity-in-educational-settings/>



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