PennState
College of Education

Trauma-Informed Practices in Early Childhood

Carlomagno Panlilio, Ph.D.
Associate Professor, Educational Psychology, College of Education
Faculty, Child Maltreatment Solutions Network, SSRI
The Pennsylvania State University

PennState
Social Science
Research Institute

Agenda

Introduction
- Trauma-informed systems
- Development, learning, adversity

The teachers as an agent of change
- Teacher-student co-regulation
- Self-regulated learning
- Early learning standards in the context of trauma-informed practices

The Trauma Sensitive Pedagogy (TSP)
- TSP SMART-TI tools

Goal 1: Define and differentiate between trauma and adversity, and understand elements of trauma-informed schools

Goal 2: Connect how teacher-oriented self-regulated learning/teaching relates to trauma-sensitive practices and early learning standards

Goal 3: Apply content knowledge related to trauma-informed practices and self-regulated learning to meet early learning standards

PennState

Trauma-Informed Child and Family Service Systems

- Recognize and respond to the impact of traumatic stress

- Infuse and sustain trauma awareness, knowledge, and skills into organizational cultures, practices, and policies

- Act in collaboration with all those involved with the child, using the best available science to:
  - ✓ maximize physical and psychological safety
  - ✓ Facilitate recovery of children and families
  - ✓ Support ability to thrive

Source: https://www.nctsn.org/trauma-informed-care/creating-trauma-informed-systems

Key Assumptions of Trauma-Informed Systems (The 4 Rs)

- **Realize** the widespread impact of trauma across systems
- **Recognize** the signs and symptoms of trauma
- **Respond** through the application of trauma-informed approaches
- **Resist** re-traumatization of children, families, and staff

Trauma-Informed Schools

- Becoming trauma-informed should be an essential component of the overall mission of the education system

- A trauma-informed school recognizes that trauma affects staff, students, families, communities, and the broader systems

- Implement the ten essential elements of trauma-informed school systems

Essential Elements of a Trauma-Informed School System

1) Identify and assess traumatic stress
2) Address and treat traumatic stress
3) Teach trauma education and awareness
4) Have partnerships with students and families
5) Create a trauma-informed learning environment
6) Be culturally responsive
7) Integrate emergency management and crisis response
8) Understand and address staff self-care and secondary traumatic stress
9) Evaluate and revise school discipline policies and practices
10) Collaborate across systems and establish community partnerships

https://www.nctsn.org/trauma-informed-care/trauma-informed-systems/schools/essential-elements

Resources on Trauma-Informed Schools

- National Center on Safe Supportive Learning Environments
  - ✓ https://safesupportivelearning.ed.gov/trauma-sensitive-schools-training-package
- Trauma and Learning Policy Initiative
  - ✓ https://traumasensitiveschools.org/about-tlpi/
- TraumaSmart
  - ✓ https://traumasmart.org/
- Trauma-Informed Programs and Practices for Schools
  - ✓ https://tipps.ssw.umich.edu/

Trauma and Adversity Defined

Childhood Trauma or Adversity?

Trauma

The National Child Traumatic Stress Network (NCTSN) defines a traumatic event as **"a frightening, dangerous, or violent event that poses a threat to a child's life or bodily integrity"** that can **"initiate strong emotions and physical reactions that can persist long after the event."**

Childhood Adversity

Exposure during childhood or adolescence to environmental circumstances that are likely to require significant psychological, social, or neurobiological adaptation by an average child and that represent a deviation from the expectable environment (McLaughlin, 2016, p. 4).

In short, some, but not all, adverse childhood experiences have the capacity to cause trauma.

Children exposed to one or more traumatic events over their lifetime may suffer from traumatic stress that persists and affect their lives (including in the academic domain) even after the conclusion of the adverse event.

PennState

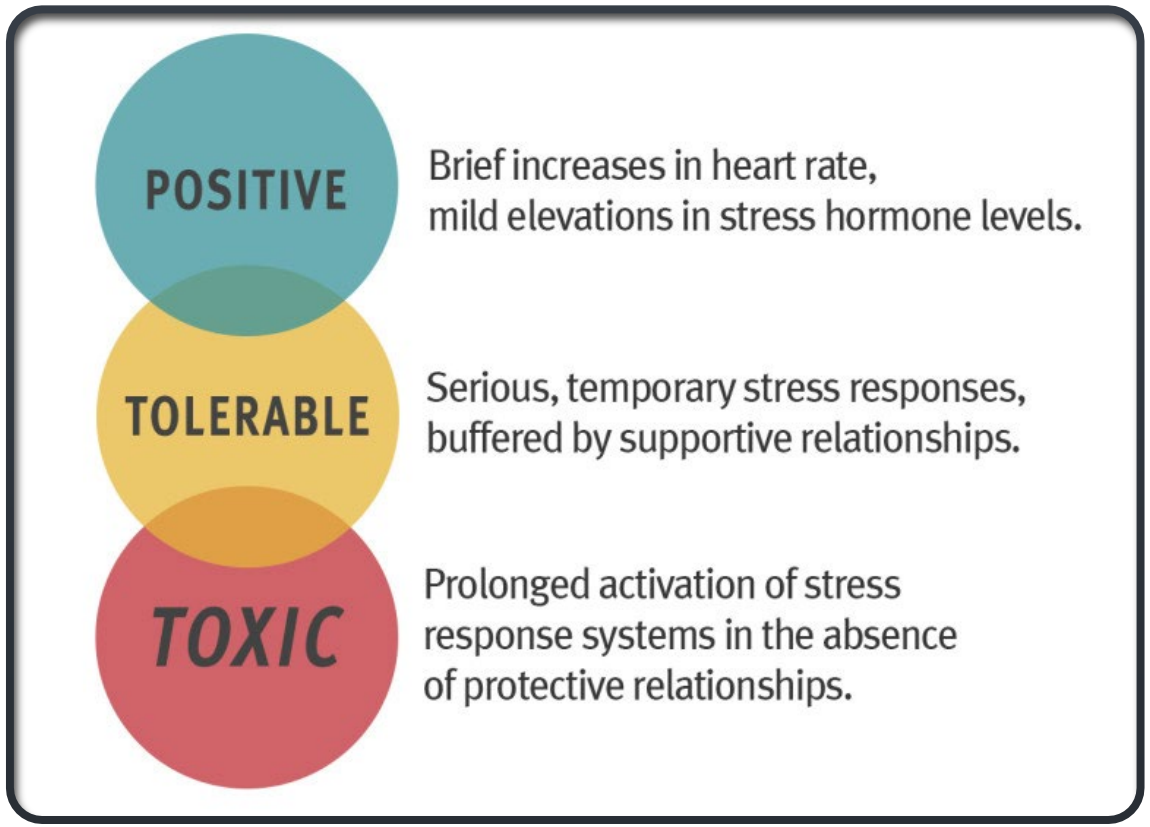
Types of Childhood Traumatic Events

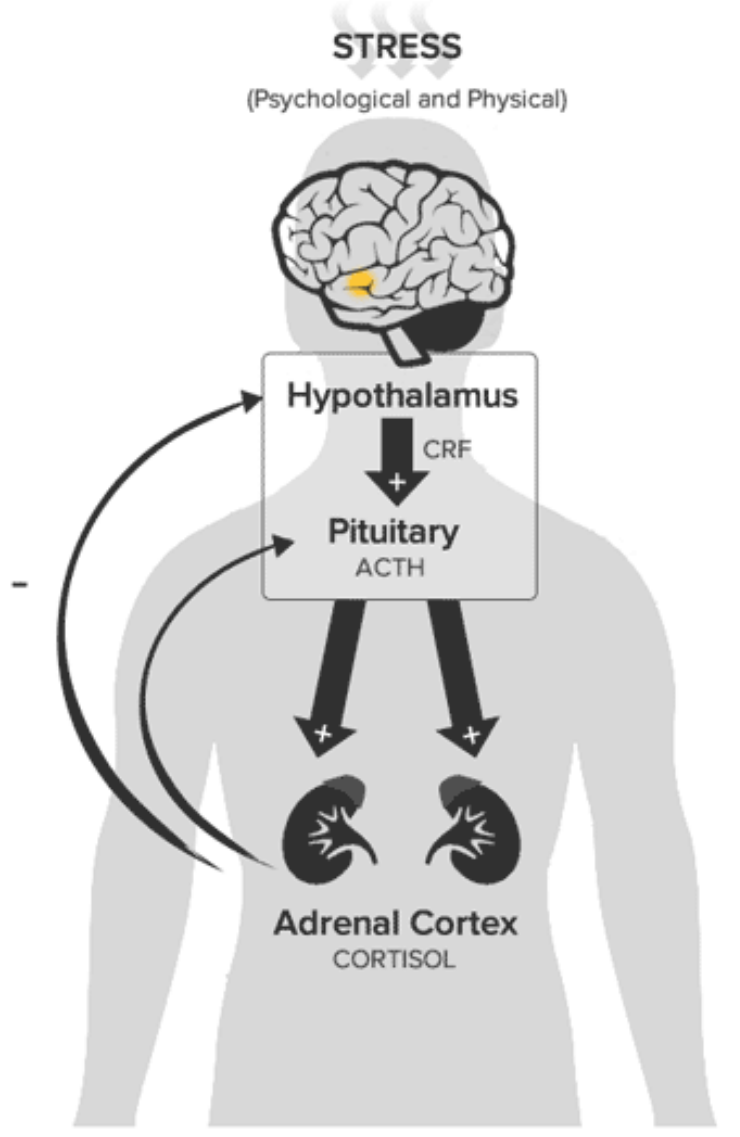
Types of trauma that impact children (as outlined by the NCTSN):

1. Bullying
2. Community violence
3. Complex trauma
4. Disasters
5. Early childhood trauma
6. Intimate partner violence
7. Medical trauma
8. Physical abuse
9. Refugee trauma
10. Sexual abuse
11. Sex trafficking
12. Terrorism and violence
13. Traumatic grief

Impact of Childhood Trauma and Adversity on Development

Toxic Stress Response



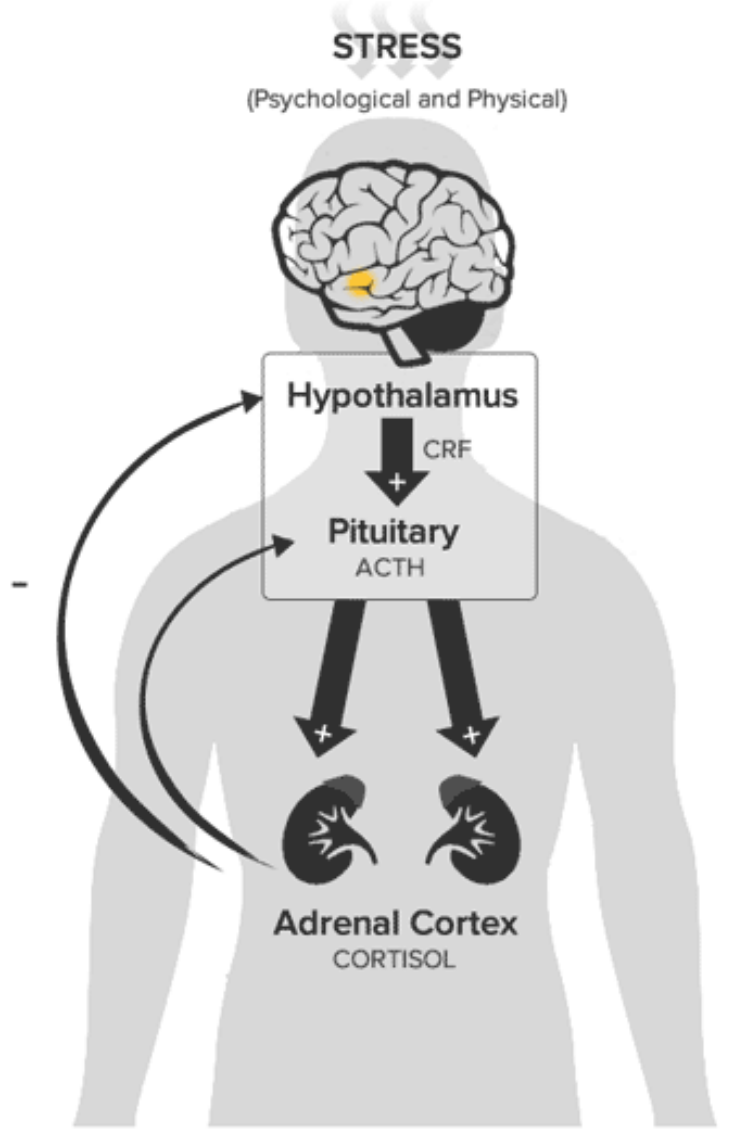


Source: https://developingchild.harvard.edu/science/key-concepts/toxic-stress/

Adversity and the Stress Response System

- Cortisol released due to stress

- Prolonged activation and exposure may result in structural and functional changes across the following:
  - Limbic Hypothalamic-Pituitary-Adrenal (HPA) Axis
  - Amygdala
  - Anterior Cingulate Cortex
  - Prefrontal Cortex

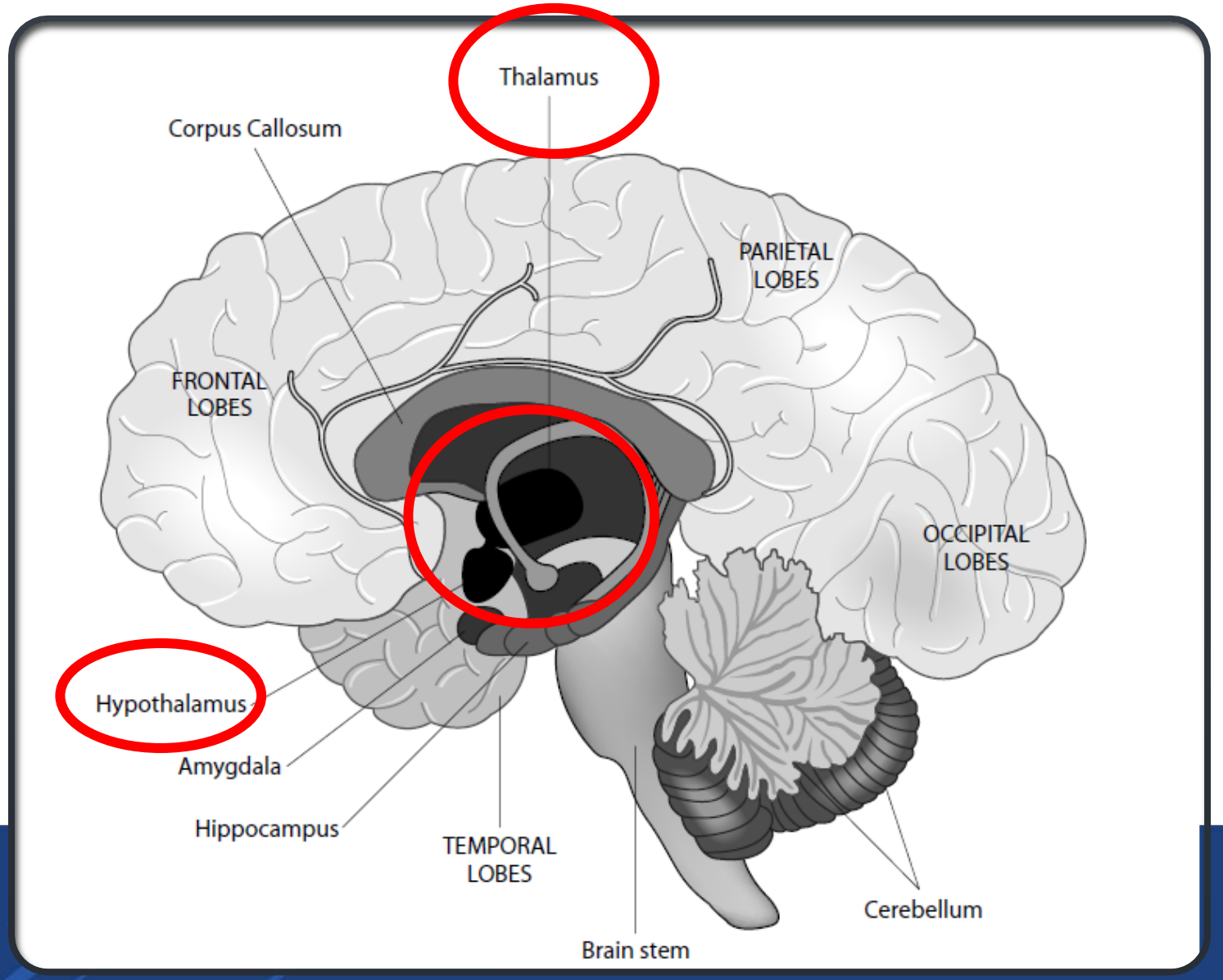


Adversity and the Brain: Thalamus and Hypothalamus

- Thalamus = bridge that send inputs from the sense organs (except smell) to the cortex

- Hypothalamus = controls body functions needed for homeostasis (e.g., body temp, sleep, water, food)…also responsible for stress-related behaviors (e.g., heart rate and breathing)

Adversity = reward network alterations; increased risky behaviors, diminished response to anticipated rewards

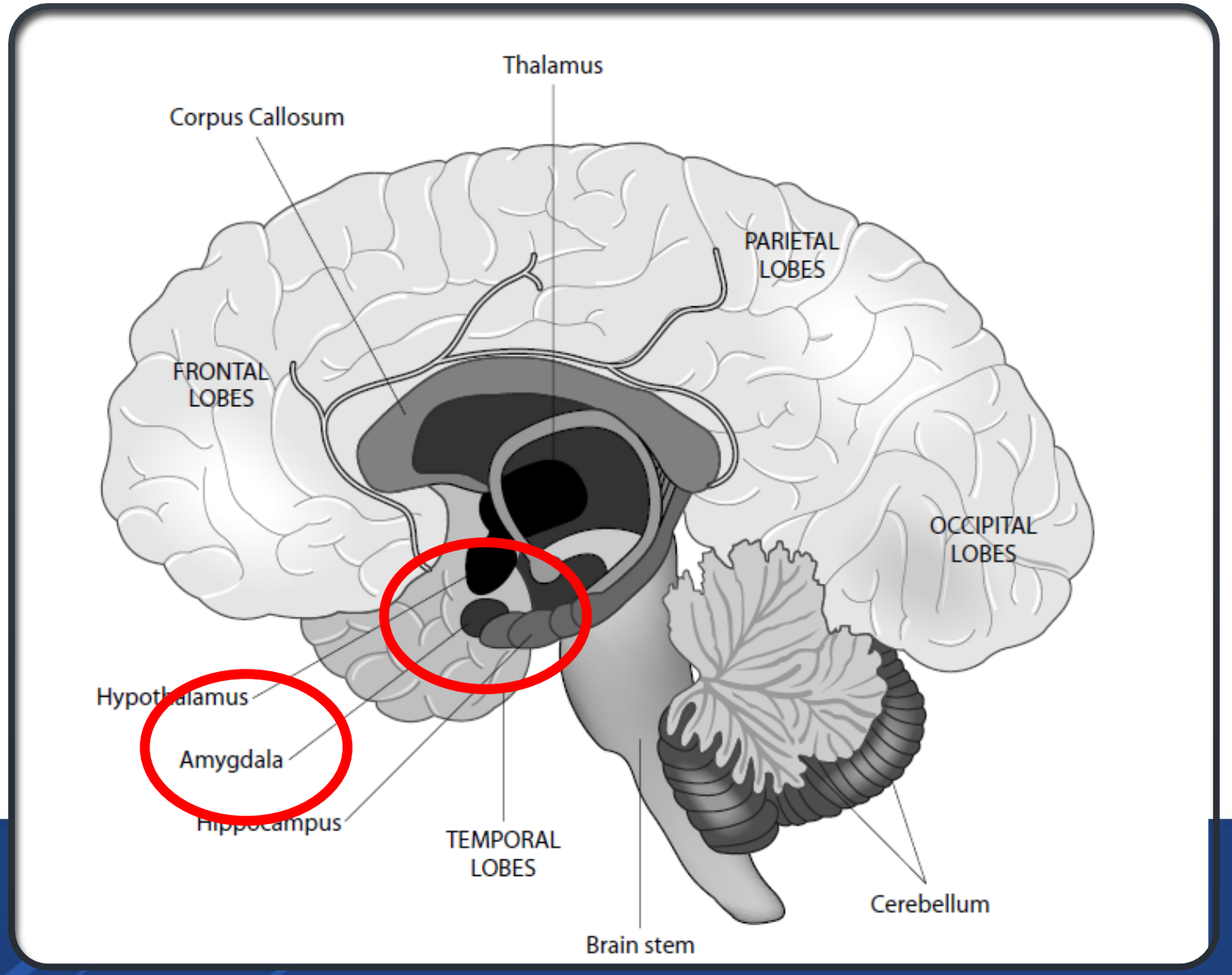


PennState

Adversity and the Brain: Amygdala

- Control of emotion and aggression
- Assess harmfulness of sensory inputs and signals the hypothalamus resulting in emotional change
- Critical role in fear conditioning
- Encoding of emotional memory and processing of emotional facial reactions

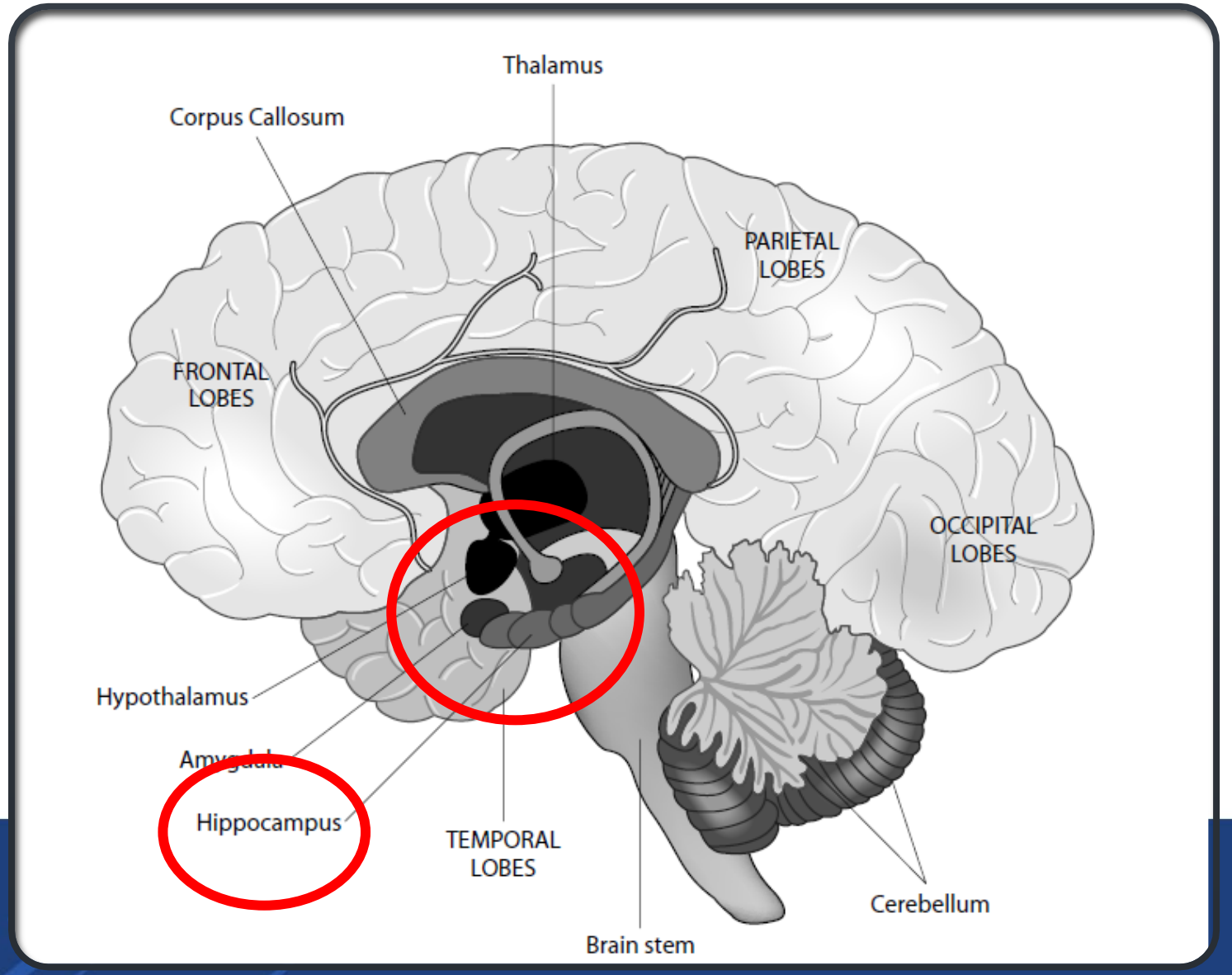
Adversity = amplified attention to threat



Adversity and the Brain: Hippocampus

- Responsible for memory of the immediate past
- Helps establish info in LTM and maintains a role in activating info needed for WM
- Controls cortico-steroid production

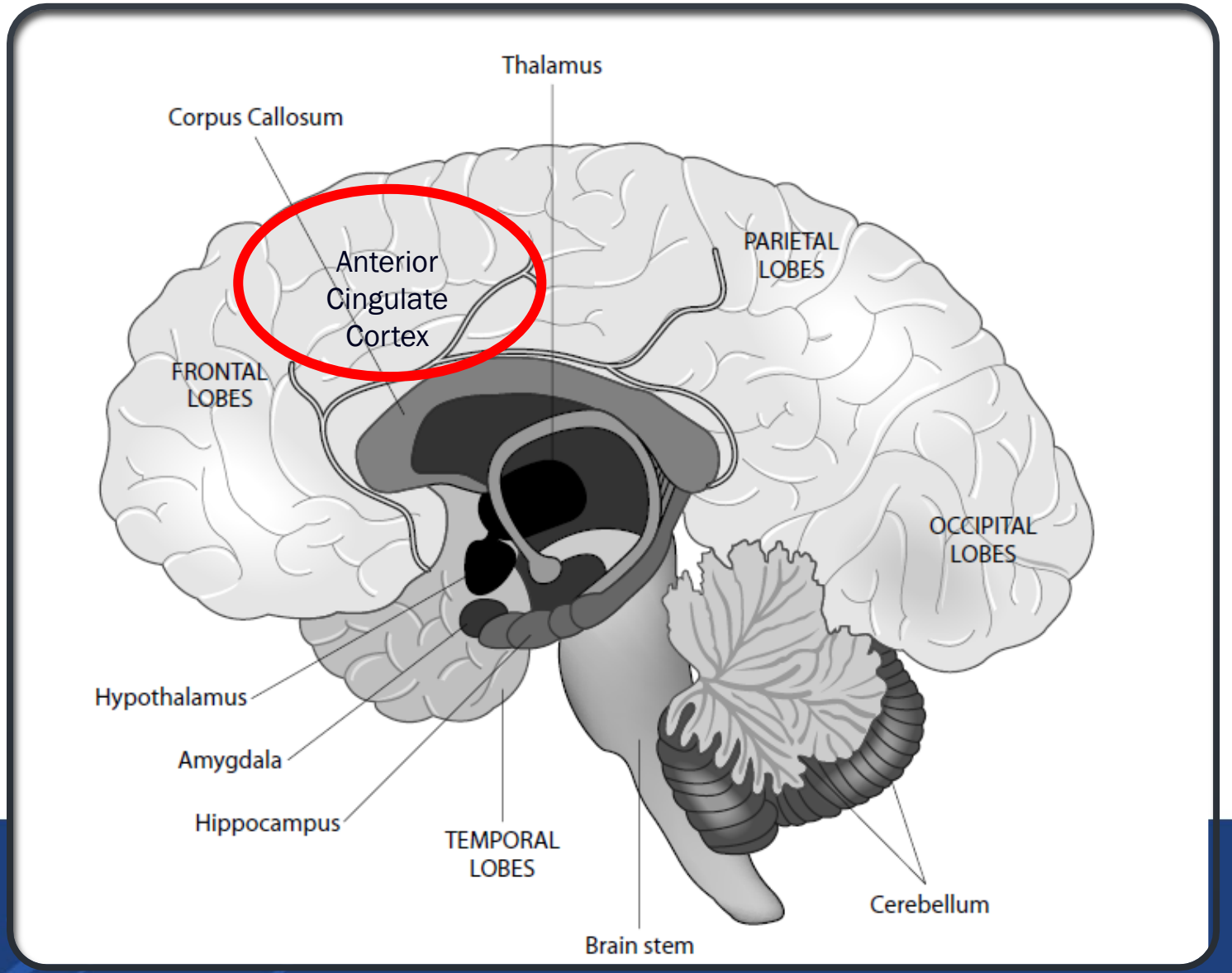
Adversity = impaired memory retrieval; behavior problems; mental health issues



Adversity and the Brain: Anterior Cingulate Cortex

- Associated with working memory, emotion processing, and conflict and ~~error~~ monitoring
  error

Adversity = problems with emotional processing; problems with error monitoring; decreased spatial working memory



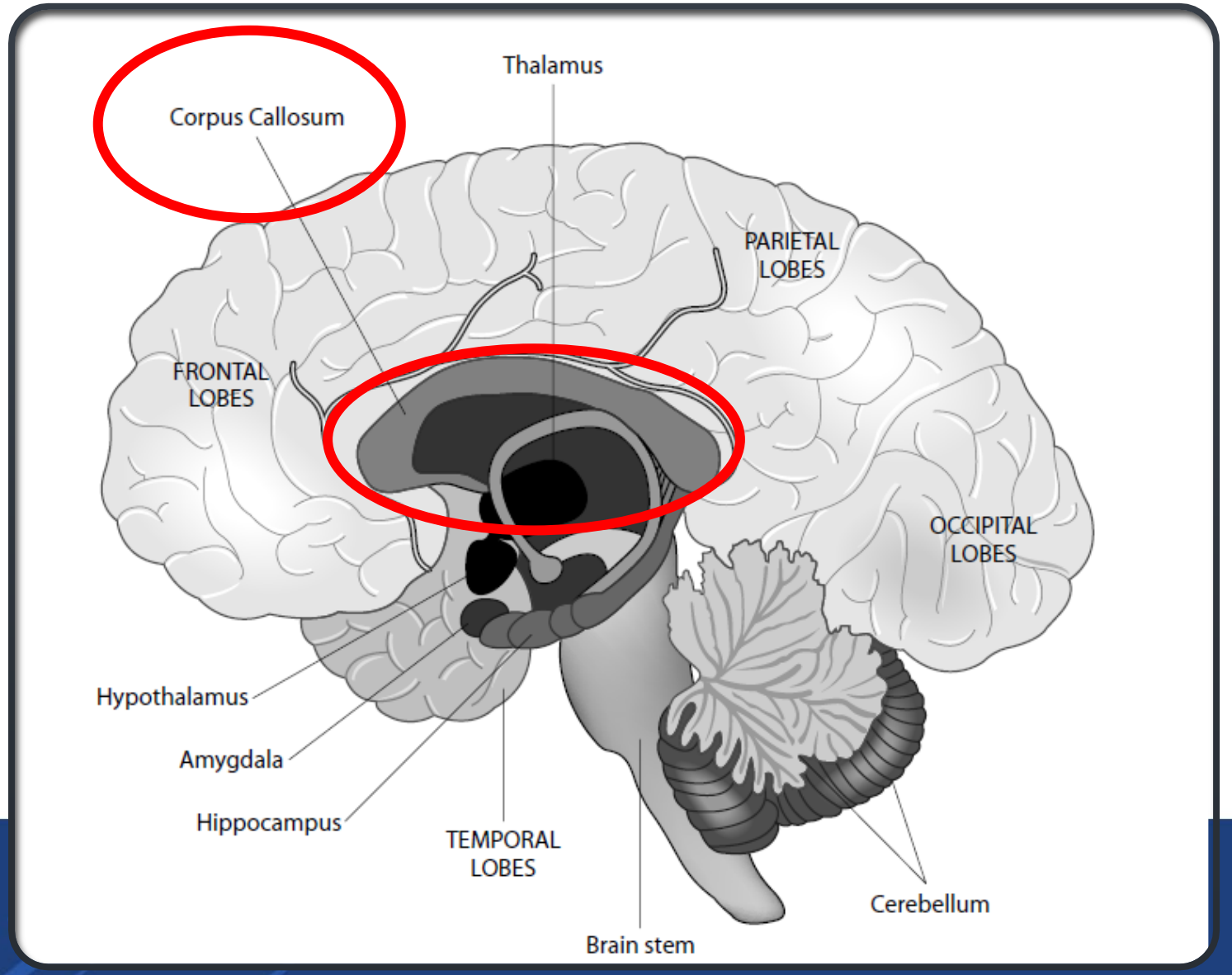
PennState

Adversity and the Brain: Corpus Callosum

- Divides the left and right hemispheres and connects them for neural processing

- Supports lateralization
  - Left hemisphere for processing verbal input, positive emotions, and sequential/analytic processing
  - Right hemisphere for processing spatial abilities, negative emotions, and integrative processing

Adversity = decreased integrity; decreased IQ scores, difficulty with problem solving; shift in approach-avoidance behaviors



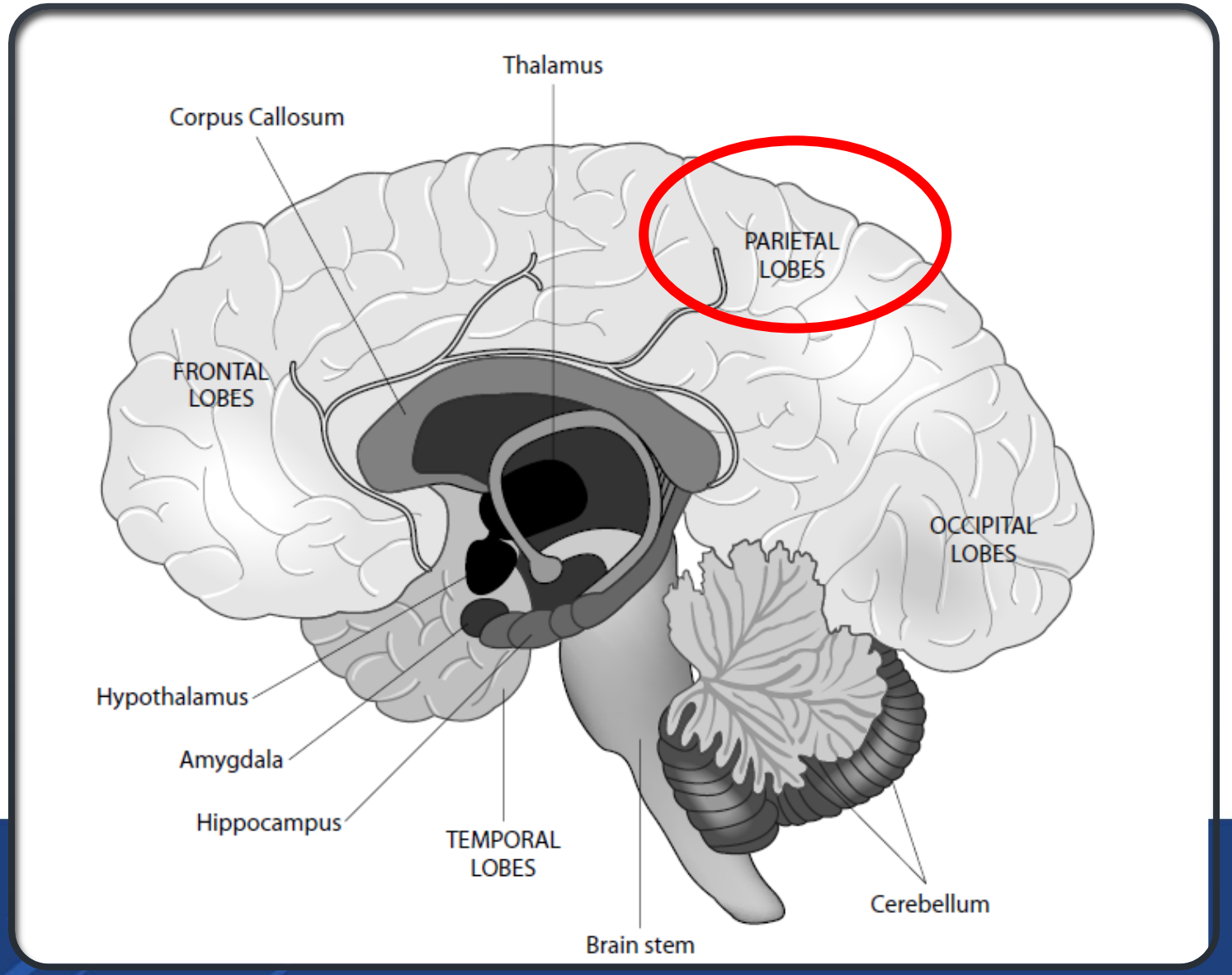
PennState

Adversity and the Brain: Parietal Lobes

- Responsible for the sense of touch and help determine body position and integration of visual information

- Associated with orienting responses such as disengaging focus and shifting attention to a new event or voluntary shift in attention

Adversity = attentional bias to perceived threat; problems with disengaging attention and shifting attention; attention to non-relevant stimuli

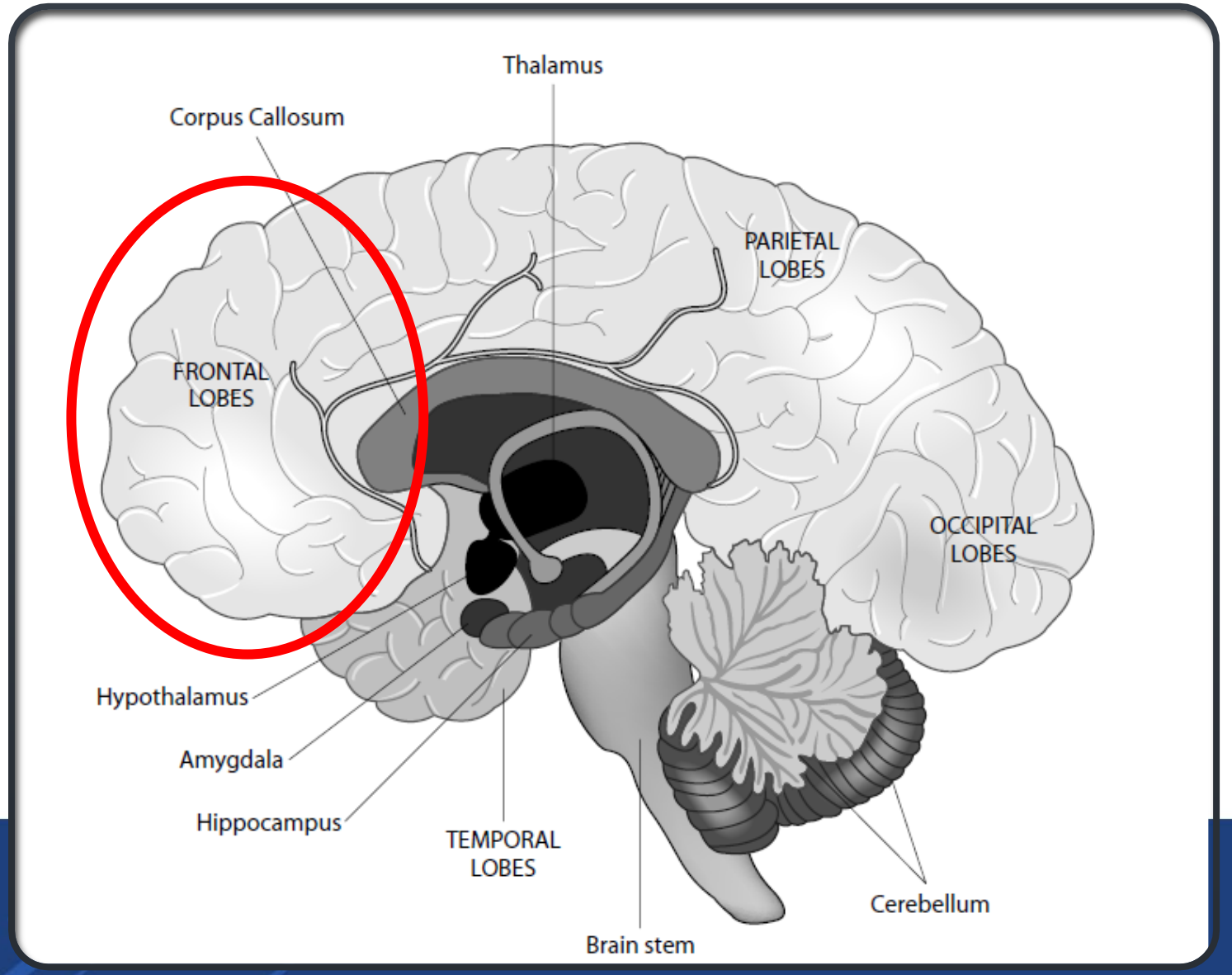


PennState

Adversity and the Brain: Frontal Lobes

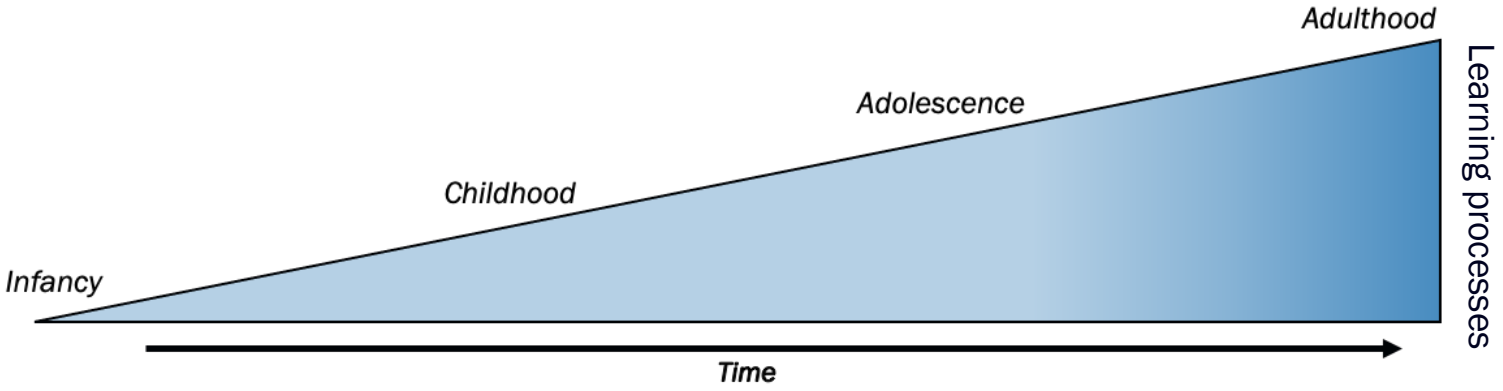
- Largest part of the cortex
- Process information relating to memory, planning, decision making, goal setting, and creativity
- Regulates muscle movement
- Prefrontal cortex (PFC) key for cognitive information processing; possibly the seat of learning
- Midline and lateral areas associated with persistence
- Activates when attention to relevant stimuli are needed

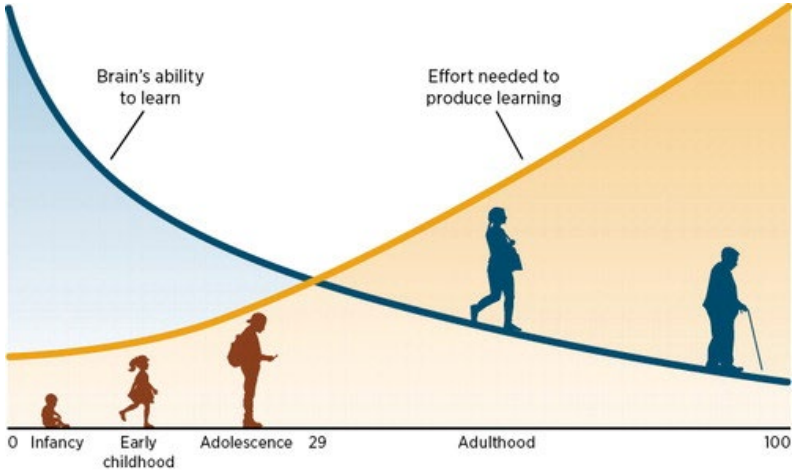
Adversity = reduced top-down regulation and increased bottom-up reactivity; smaller ERN during error monitoring task; diminished reward anticipation; shift in approach-avoidance behaviors



PennState

Learning across development





Learning processes improve across time that enable learning in multiple domains.

As learning processes develop, so to does the brain, and vice versa.

BUT as we age, our ability to learn gradually decreases → requires more effort

Adversity: From Brain Structure to Cognitive Function

Executive function and cognitive self-regulation

- Difficulty with planning and anticipating
- Problems focusing and completing tasks

Memory

- Problems with encoding, retention, and recall of information
- Problems with processing novel information

Attention

- Bias toward anger or sadness eliciting stimuli

Problem solving

- Decreased problem-solving abilities
- Limited selection of strategies

Intelligence

- Lower scores on IQ tests

Language

- Problems with receptive and expressive language abilities

Visuo-spatial problems

Learning and Instruction in the Context of Adversity

Moving From Knowledge to Trauma-Informed Practice through Self-Regulation

Learning

- *Entails the acquisition and modification of knowledge, beliefs, attitudes, strategies, emotions, and behaviors that often result in enduring changes due to different experiences, leading to variability in developmental and learning trajectories over time* (Panlilio et al., 2023)

Self-regulation

Developmental Perspective (dual process): "The primarily, but not necessarily, volitional **management of attention and arousal**, including stress physiology and emotional arousal, for the purpose of **goal-directed action**" (Blair & Ursache, 2010, p. 305)

Top-Down Processes

Expending **cognitive effort** to control emotions and stay on goals

Inhibitory and attentional control: reorient attention to the goal and ignoring more salient/seductive stimuli to stay on task

Goal setting: planning, scheduling, and monitoring progress

Bottom-Up Processes

Automatic responses to the environment, aka **reactivity** – related to stress

Physiological responses: increased heart and breathing rates

Habit formation: automatic behavior in reaction to stimulus, such as reaching for the phone when a notification is heard

These processes can sometimes be imbalanced, affecting how we interact with our environment and the people in it, ultimately impacting whether we achieve our goals.

PennState

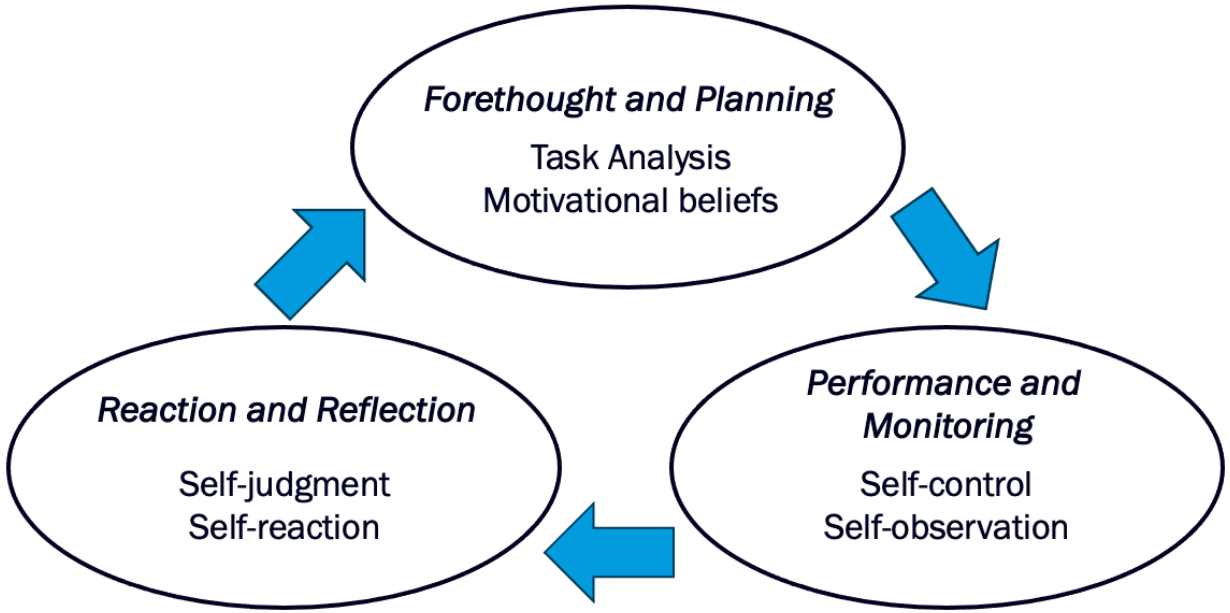
Self-regulated learning (SRL)

Self-regulated learning involves an iterative three phase process that facilitates effective management and adaptation of learning processes in a goal-oriented manner.

Forethought and Planning: Learners establish clear goals and create plans to achieve them, actively managing their learning process.

Performance and Monitoring: Learners engage in self-control and self-observational processes to stay on goal-oriented action

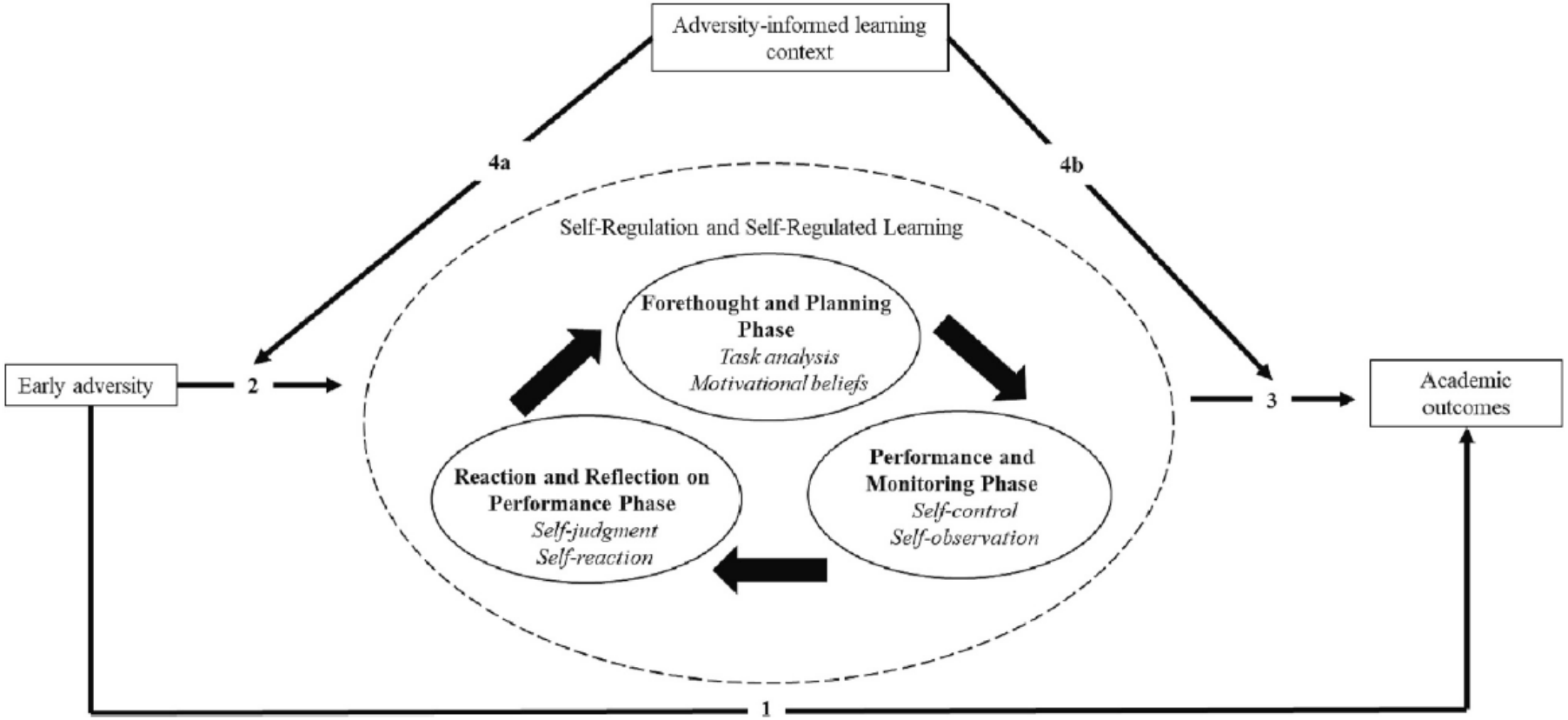
Reaction and Reflection: Learners assess their understanding, adjusting strategies as needed.



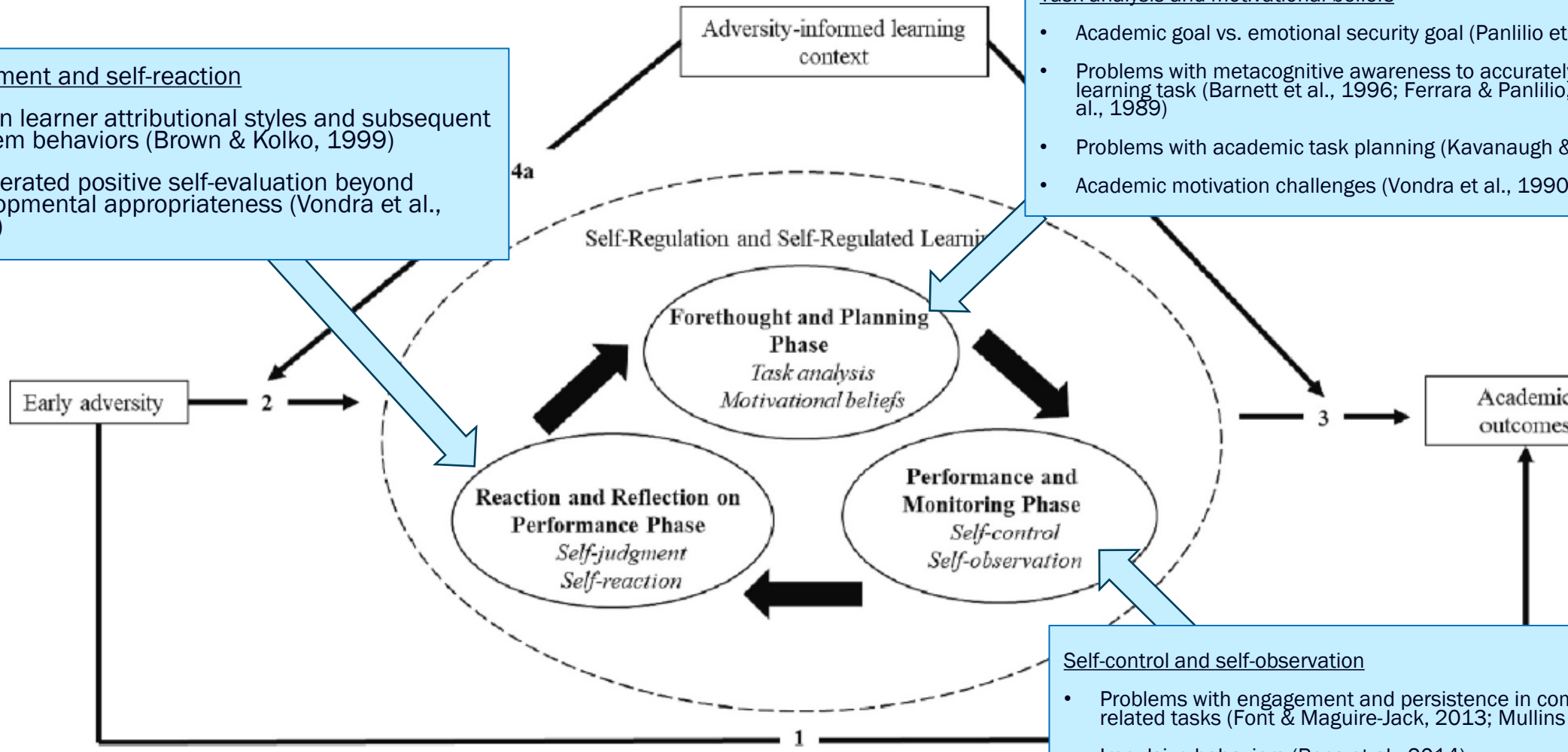
It's possible that adversity-exposed youth's SRL skills are affected in some ways due to their experiences. This perspective gives us a manner in which to think about targets for supports and interventions.

PennState

Framework to Understand Learning in the Context of Adversity: Combining Self-Regulation and Self-Regulated Learning



Source: Panlilio et al. (2023). Available online: https://doi.org/10.1016/j.chiabu.2023.106176



Self-judgment and self-reaction

- Shift in learner attributional styles and subsequent problem behaviors (Brown & Kolko, 1999)
- Exaggerated positive self-evaluation beyond developmental appropriateness (Vondra et al., 1989)

Task analysis and motivational beliefs

- Academic goal vs. emotional security goal (Panlilio et al., 2020)
- Problems with metacognitive awareness to accurately assess a learning task (Barnett et al., 1996; Ferrara & Panlilio, 2020; Vondra et al., 1989)
- Problems with academic task planning (Kavanaugh & Holler, 2015)
- Academic motivation challenges (Vondra et al., 1990)

Self-control and self-observation

- Problems with engagement and persistence in completing academic-related tasks (Font & Maguire-Jack, 2013; Mullins & Panlilio, 2021)
- Impulsive behaviors (Roos et al., 2014)
- Reactive emotional responding (Jones Harden et al., 2016)
- Attentional bias and problems with shifting attention and tasks (Loman et al., 2013; Pollak et al., 2005)
- Problems with metacognitive monitoring (Daly et al., 2017; Ferrara & Panlilio, 2020)

Hidden talents

Deficit-based approaches to research and intervention

- Focus more on weaknesses than on recognizing the strengths that can arise in response to adversity.

Hidden talents

- Skills largely invisible to professionals within a deficit framework
- "The hidden talents approach conceptualizes stress-adapted children and youth as socially and cognitively intact or even enhanced for functioning in harsh, unpredictable environments." ***– can be leveraged in class***

Notes for further understanding

- Not all exposures to adversity result in negative outcomes; some adaptations can be healthy and beneficial.
- Positive adaptations to adversity are often facilitated by a combination of internal and external factors.
- External factors, such as secure and supportive relationships with adults (e.g., parents, teachers, extended family), can promote resilience to adversity.

PennState

Ellis, B. J., Abrams, L. S., Masten, A. S., Sternberg, R. J., Tottenham, N., & Frankenhuis, W. E. (2022). Hidden talents in harsh environments. Development and psychopathology, 34(1), 95–113. https://doi.org/10.1017/S0954579420000887

Making Space for Resilience: Adversity-Informed Learning Contexts

- Little is known about how we can leverage children's strengths within a supportive environment to foster resilience and promote academic success
- To make space for resilience, acknowledge the **multifinality** of developmental outcomes
- Downstream consequences of adverse events may result in different harmful, as well as adaptive effects
- Acknowledgment of unique strengths and abilities may help us move away from a deficit approach to supporting children with traumatic experiences
- Resilience is a multisystemic developmental process that requires adversity-informed learning contexts to offer supportive relationships to children

Moving Away from the Deficit Approach

- Move away from solely identifying “traumatized” students…especially when using the ACEs survey instrument
- Be mindful of unintended effects of negative bias against students with traumatic histories (e.g,, “the soft bigotry of low expectations”)
- Incorporate a whole child perspective, including individual, family, and community strengths
- Build a supportive classroom climate as a universal practice for all students

Head Start's Early Learning Outcomes and Trauma-Informed Education

	CENTRAL DOMAINS				
	APPROACHES TO LEARNING	SOCIAL AND EMOTIONAL DEVELOPMENT	LANGUAGE AND LITERACY	COGNITION	PERCEPTUAL, MOTOR, AND PHYSICAL DEVELOPMENT
▲ INFANT/ TODDLER DOMAINS	Approaches to Learning	Social and Emotional Development	Language and Communication	Cognition	Perceptual, Motor, and Physical Development
● PRESCHOOLER DOMAINS	Approaches to Learning	Social and Emotional Development	Language and Communication	Mathematics Development	Perceptual, Motor, and Physical Development
			Literacy	Scientific Reasoning	

Source: https://eclkc.ohs.acf.hhs.gov/school-readiness/article/head-start-early-learning-outcomes-framework

Trauma-Informed Education: Meeting Indiana's Academic and Early Learning Standards

The need to achieve kindergarten readiness in early childhood and alignment with Indiana's Academic Standards across the following domains:

- English/Language Arts
- Mathematics
- Science
- Social Studies
- Student Wellbeing
- Approaches to Play and Learning
- Creative Arts
- Physical Education

Source: https://www.in.gov/doe/students/indiana-academic-standards/early-learning/

Trauma-Informed Practice in Early Childhood Education

The teacher as an adaptive agent of change

The Many Responsibilities of a Teacher

In their day-to-day life, teachers take on different roles as they cater to the needs of their individual students, whole classroom, families, and administrators.

Four broad domains of teaching

Adapted from the Danielson Framework

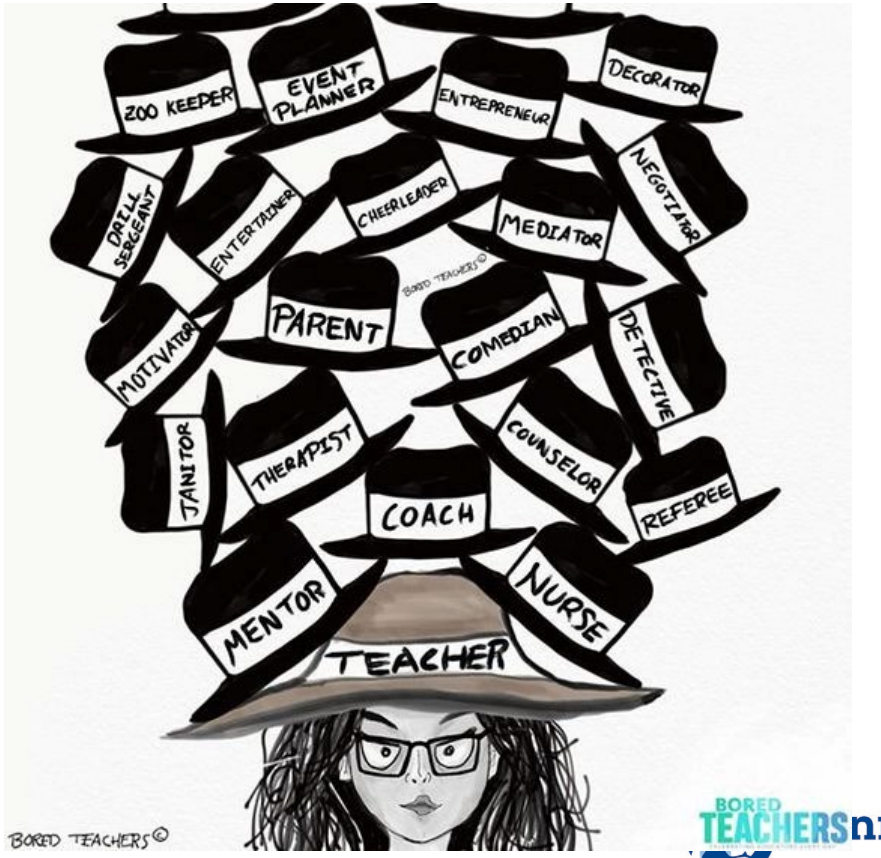
1. Planning and Prep
   a) Knowledge of students
   b) Setting instructional outcomes

2. Classroom Environment
   a) Create culture for learning
   b) Physical space

3. Instruction
   a) Student engagement
   b) Questioning and discussion

4. Professional responsibilities
   a) Maintain records
   b) Communicating with families

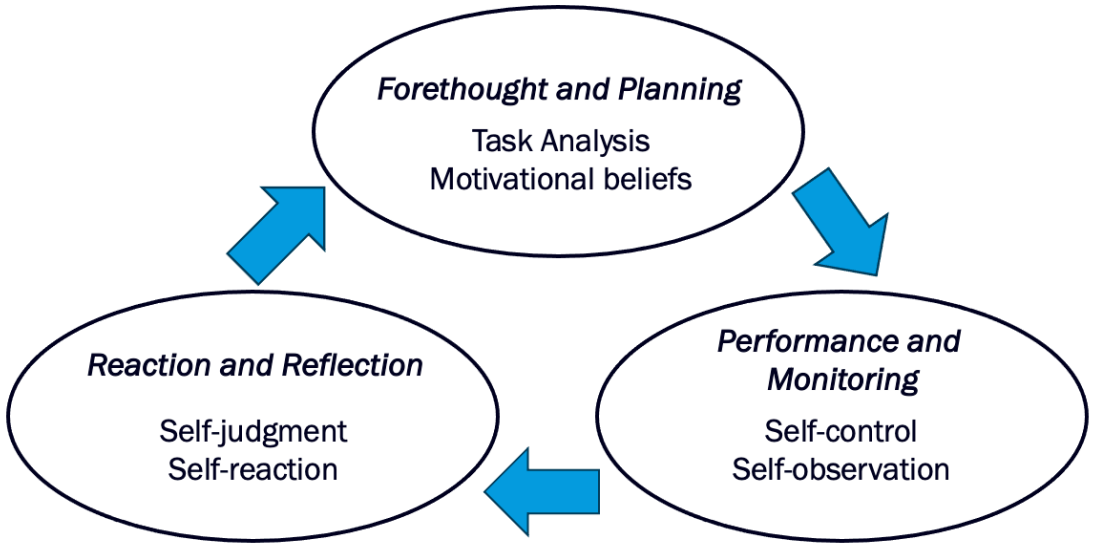
The many hats that teachers wear



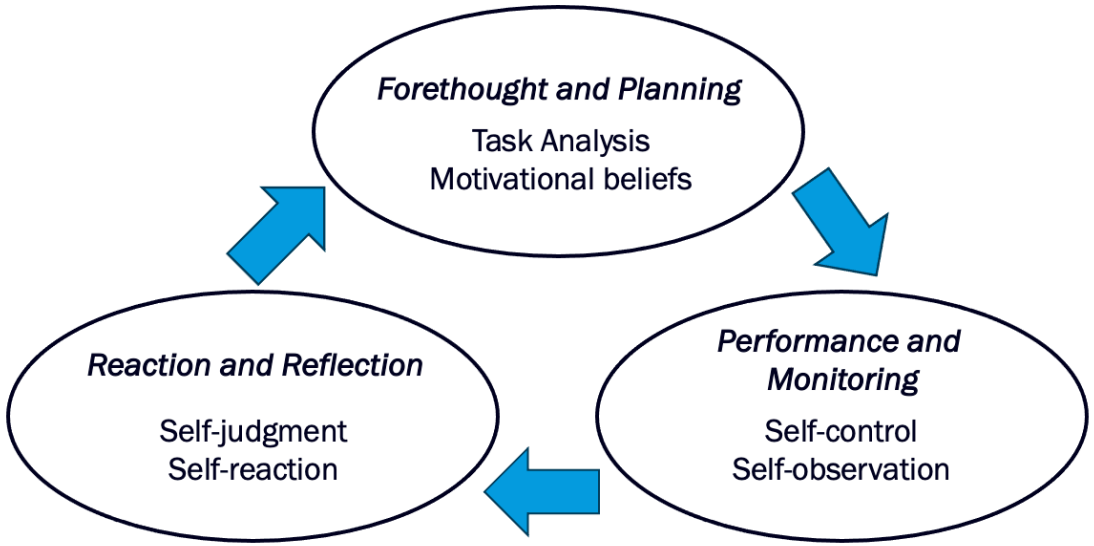
What occurs in a classroom when student and teacher goals DO NOT align?

Teacher and Student Self-Regulated Learning

Student



Teacher



Goal example: Maintain emotional security ≠ Goal example: Teach multiplication

Goal example: Learn multiplication = Goal example: Teach multiplication

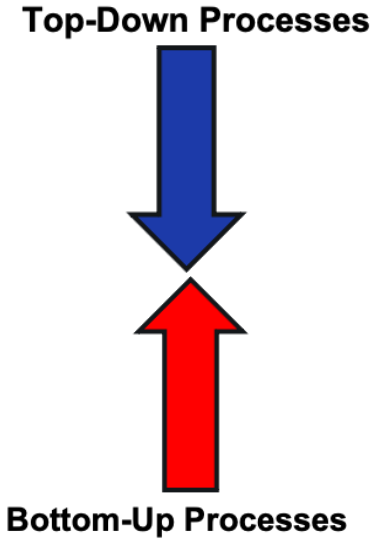
As necessary as it is for us to think about student SRL, we must not forget that in our professional capacities, we also engage in the SRL process.

PennState

Schunk, D. H., & Zimmerman, B. J. (Eds.). (1998). Self-regulated learning: From teaching to self-reflective practice. Guilford Press.

Teacher-Student Co-Regulation

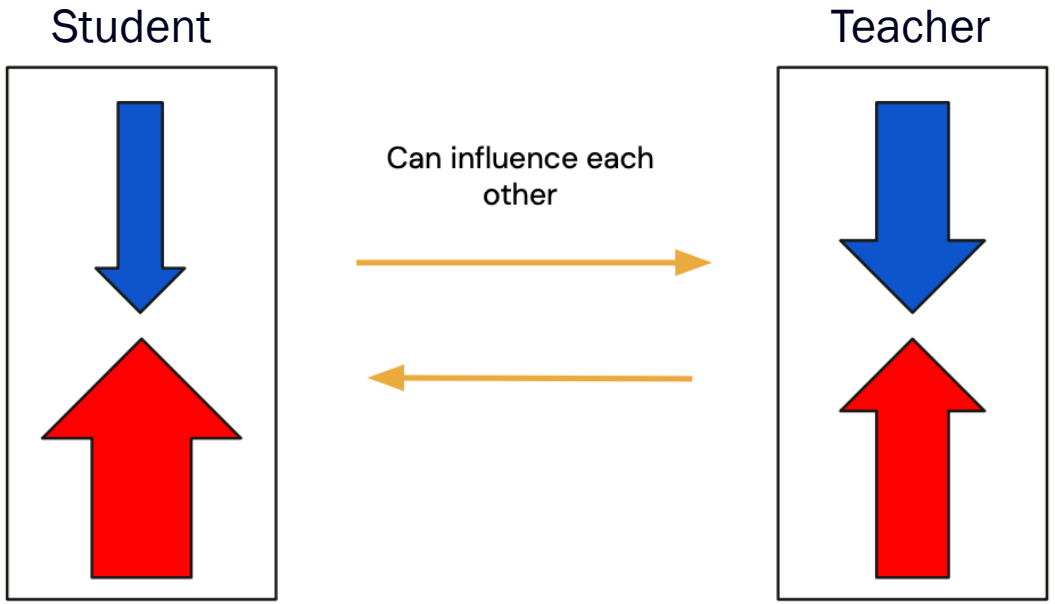
Self-regulation



Expending **cognitive effort** to control emotions and stay on goals

Automatic responses to the environment, aka **reactivity** – related to stress

Co-regulation



Allal, Linda (2019). Assessment and the co-regulation of learning in the classroom. Assessment in Education: Principles, Policy & Practice, (), 1–18. doi:10.1080/0969594X.2019.1609411

PennState

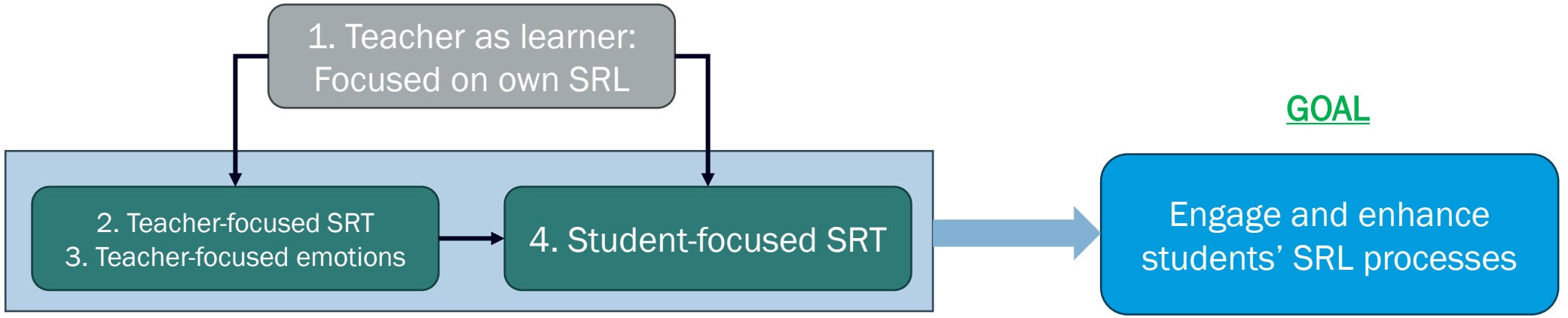
Self-Regulated Teaching: An Adaptive Approach

To engage and enhance students' SRL processes, teachers must:

1. Be able to self-regulate their own learning of pedagogy, subject domain, SRL, etc.
2. Be able to self-regulate their own teaching practice (e.g., lesson planning, in-class monitoring of student progress)
3. Be able to self-regulate their own emotional reactions and wellbeing
4. Be able to engage their students using SRL-activating instruction (i.e., support students' SRL development)

Focus on teacher practice

Teachers' **Self-regulated teaching (SRT)**



Adapted from Kramarski and Heaysman (2021)

Engaging in Self-Regulated Teaching

The Trauma-Sensitive Pedagogy Curriculum

The Trauma Sensitive Pedagogy (TSP) Curriculum

- Developed as a collaborative effort between Dr. Christy Tirrell-Corbin at the University of Maryland and Dr. Carlo Panlilio at the Pennsylvania State University
- Focuses on early childhood teachers as change agents in the academic trajectories of students who experienced trauma
- Engages the network of educators (e.g., administrators, special educators, learning specialists) needed to support children's academic success

Panlilio and Tirrell-Corbin (2017)

S Specific

M Measurable

A Achievable

R Relevant

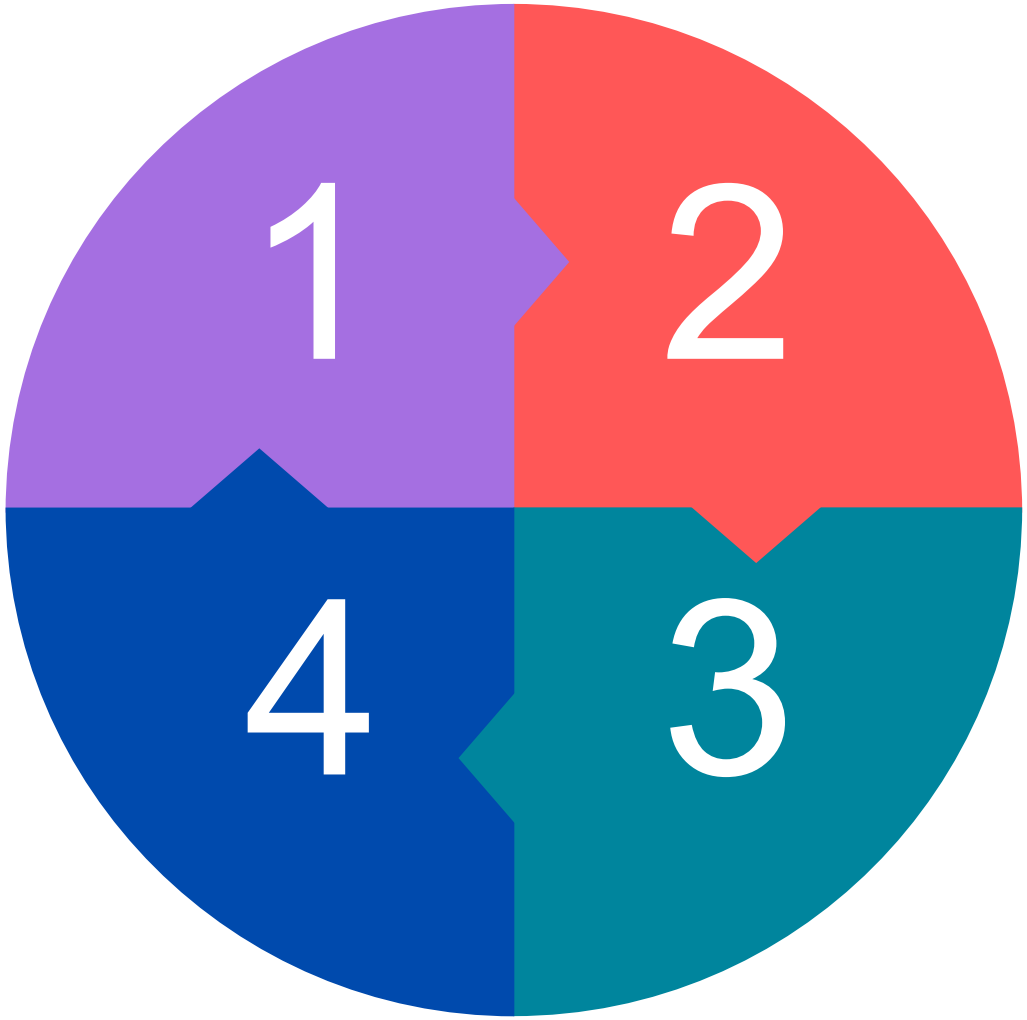
T Timely

TI Trauma-Informed

How to use the TSP SMART-TI Tool

1 Create TSP SMART-TI Goals

Creating goal-centered instructional practices aimed at helping students who have experienced trauma successfully learn



2 Create TSP SMART-TI Strategies

Techniques and guidelines for creating goal-specific strategies that can be used to help students who have experienced trauma reach a ready-to-learn state.

4 Practice TSP SMART-TI Strategy Reflection

Tools to consistently apply and modify strategies and track their progress over time and narrow down what works.

3 Select TSP SMART-TI Strategy to Implement

Procedures to effectively narrow down strategies that will be put in place to make the most efficient use of time and address student learning goal.

Example Case Study Analysis

Contributors: Christy and Carlo Date: 2/25/2021

Background Information

- Pseudonym: Juan
- Age: 7.5 Years Old
- Grade: 2nd Grade
- Juan is a Hispanic male.
- Family: His mother and father are separated.
- Household: Juan is currently living in a one-bedroom apartment with his mother, 2 other family members and his mom's boyfriend.

Perceived Trauma-Related Factors

- Parents are seperated; alleged domestic abuse when they were together.
- Juan has not seen his dad for a while but talks to him on "Facetime".
- When asked by his teacher whether he feels safe at home, Juan responded that he does not.
  - Juan shared that his mother's boyfriend drinks a lot.
  - Juan's sister has been reported to use drugs and alcohol and has offered these substances to him.
- He appears down (or sad) on the majority of days that he comes to school, which impedes his ability to do classwork

Classroom-related Challenges

- Juan struggles with math. He has been in math intervention in the past.
- He lacks general number sense and does not understand place value concepts.
- Juan received a C in math for the second quarter as well. He received a 40% on the quarter one district math assessment and a 26.7% on the quarter two distinct assessment.
- He is in ESOL level 4.

Strengths

- Juan likes school and is sometimes motivated to learn.
- He has a vivid imagination, and participates in class discussions.
- He gets along with his teachers and his peers.
- He is taking a dance class and plays soccer in an outside program.

TSP SMART-TI Flow Chart

1 TSP SMART-TI Goal Brainstorm

Directions: Brainstorm goals you wish to for specific learning standards to accomplish. Explain how each goal is Specific, Measurable, Achievable, Relevant, Timely, and Trauma-Informed. Select the most appropriate goal that meet the SMART-TI standards.

Goal 1: _____

S	M	A	R	T	TI

Goal 2: _____

S	M	A	R	T	TI

Goal 3: _____

S	M	A	R	T	TI

1 Create SMART-TI Goals

Example Goal: Juan will be able to count objects up to 50 with 90% accuracy within 3 weeks.

S Specific	• Be a specific as possible so you can tell when you have completed a goal or step • "Improve counting" is vague, but "Counting to 50 with 90% proficiency within three weeks" tells you what and when.
M Measurable	• Making goals and steps measurable means you can trace your progress over time. • "In the example above, "within three weeks" gives you a way to measure progress and the success/fulfillment of the goal.
A Achievable	• Make sure the goal you have chosen can be attained. • While it is important to have high expectations for children, it may be unrealistic to expect counting to 1000 with 90% proficiency within 3 weeks.
R Relevant	• Make sure the goal you have is in line with the learning standard of interest. • Being confident in his ability to count is a goal, but perhaps not the most relevant if the aim is for him to be successful at counting to 50.
T Timely	• Make sure that now is a good time to work towards this goal. • For example, it might not make sense to start the process of improving his counting the week before winter break.
TI Trauma-Informed	• Make sure the goal you have chosen adheres to trauma-informed principles. • This may require inclusion of social and emotional supports in the form of one-on-one scaffolding and/or opportunities to demonstrate success.

2

TSP SMART-TI Strategy Brainstorm

Directions: Brainstorm specific trauma-informed learning and instruction strategies to address your selected goal from step 1. Explain how each strategy is Specific, Measurable, Achievable, Relevant, Timely, and Trauma-Informed.

SMART-TI Goal: _____

Strategy 1: _____

S	M	A	R	T	TI

Strategy 2: _____

S	M	A	R	T	TI

Strategy 3: _____

S	M	A	R	T	TI

2 SMART-TI Strategy Brainstorm

Strategy 1 (Not SMART-TI) Provide Juan with manipulatives to count		Strategy 2 (SMART-TI) Juan will work on counting with a math specialist using counting blocks for 20 minutes, 3x times a week for 3 weeks
Which manipulatives will he be given? Will there be any scaffolding?	Specific	Clear task with a specialist that can provide necessary scaffolding.
Does not provide information regarding frequency, intensity, or duration.	Measurable	Can take frequency data on attendance; specialist can document progress data during session.
There is nothing that Juan can clearly achieve.	Achievable	Achievable if the specialist is available.
Does provide the opportunity for Juna to count but does not ensure he has supports to reach the goal.	Relevant	Provides the opportunity for ongoing support/scaffolding as he learns to count to 50.
Can be completed in allotted time but would not provide evaluative information at the end of 3 weeks.	Timely	Can be completed in the allotted time.
For this to be trauma-informed, you need to alter the strategy to consider the student's trauma.	Trauma-Informed	Interaction with the specialist encourages supportive, social interaction; informed by his experience of trauma.

3 TSP SMART-TI Strategy Selection

Directions: Select your top 3 strategies to use for achieving your SMART-TI goal and complete the strategy chart below. Choose one strategy to use and move on to step 4.

SMART-TI Goal: _____

Strategy	How is the strategy trauma-informed?	Strategy Strengths	Possible Barriers	Who will implement the strategy?	Timeline of Strategy Implementation

4 TSP SMART-TI Strategy Reflection

Directions: Using the scale below, select the number that best represents how successful was your strategy towards attaining your SMART-TI Goal. Then, explain your reasoning as to why you selected that number below.

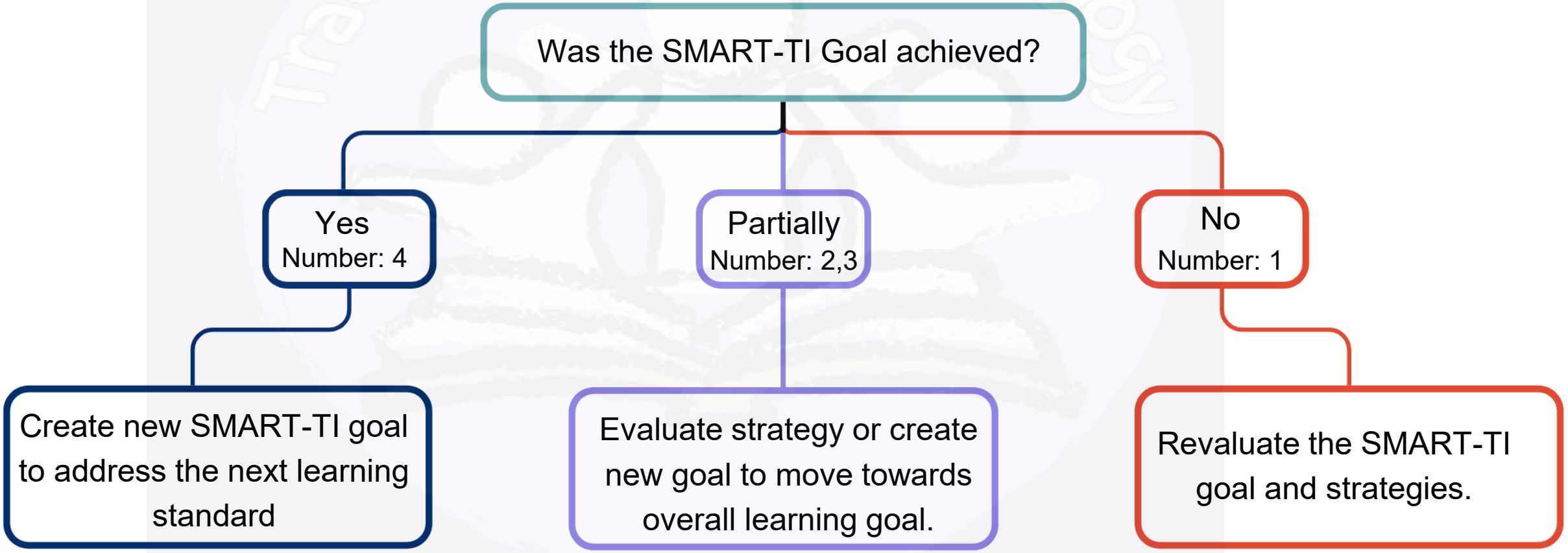
SMART-TI Goal:	
SMART-TI Strategy:	

1	2	3	4
Not at all successful	Somewhat successful	Mostly successful	Entirely successful

Explain Your Reasoning

4 TSP SMART-TI Strategy Reflection: Next Steps

After completing the SMART-TI reflection scale, evaluate if the intended goal was completed and what the next steps might be.

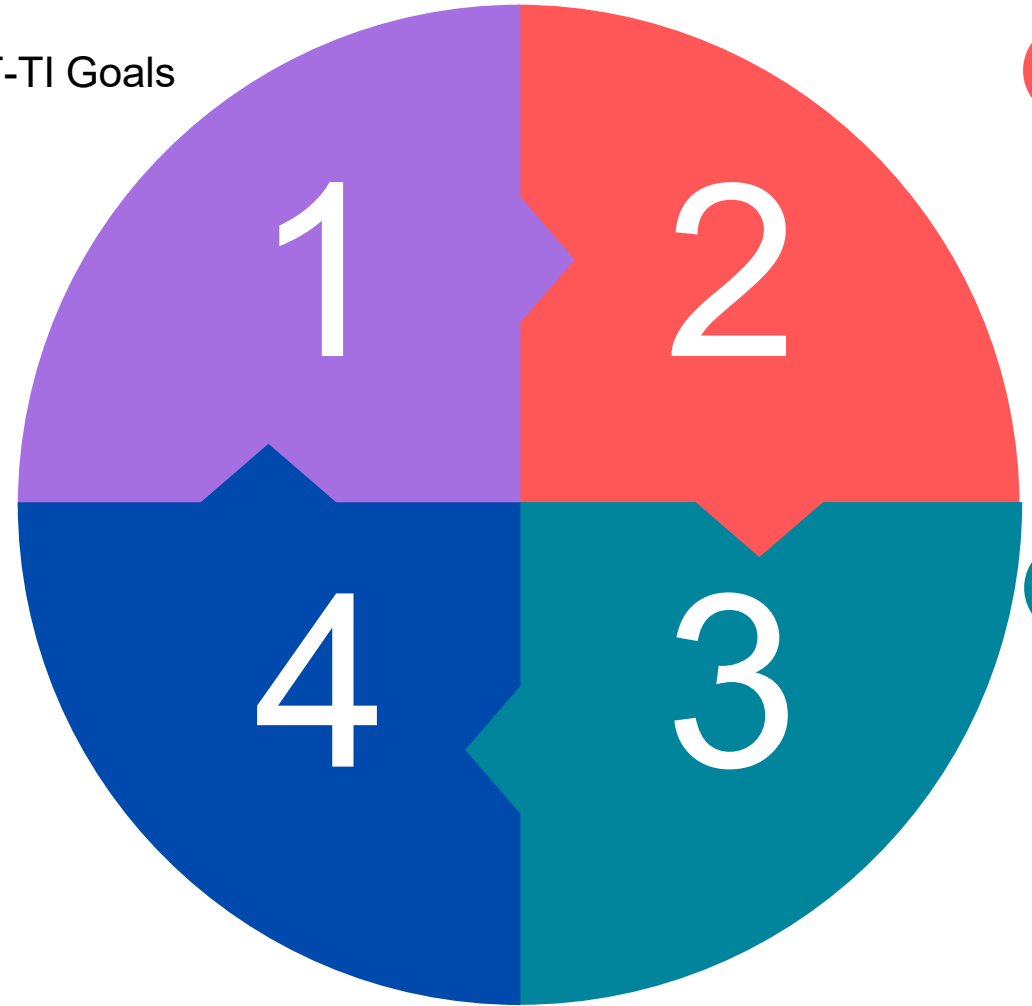


The Iterative Cycle of the TSP SMART-TI Tool

At each step (goal-setting, strategy brainstorm, strategy selection and monitoring, or strategy reflection), the process of addressing a learning standard is iterative and dynamic

1 Create TSP SMART-TI Goals

2 Create TSP SMART-TI Strategies



4 Practice TSP SMART-TI Strategy Reflection

3 Select TSP SMART-TI Strategy to Implement

Questions?

Panlilio@psu.edu

Learning, Adversity, and Self-Regulation (LASR) Lab

https://sites.psu.edu/lasrlab/