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### Regulation vs. Replacement: Teaching New Skills through a Developmentally Informed Lens

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## Objectives

Participants will:

- 1. Understand how ACEs (adverse childhood experiences) and trauma impact student learning.
- 2. Review the literature on development, regulation, and replacement skills
- 3. Compare and contrast regulation skills and replacement behavior skills.
- 4. Understand how to utilize both regulation and replacement skills to support student success.
- 5. Identify at least two interventions to support development of regulation and replacement skills.

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# ACEs and Trauma

## Adverse Childhood Experiences

ACEs are defined as potentially traumatic events that occur in childhood.

These can include:

- Violence
- Abuse
- · Growing up in family with mental health or substance abuse
- Experiencing neglect
- · Instability in the home
- Experiencing discrimination
- · Access to shelter, sleep, and food

# <image><figure>

### Trauma

Rajaraman, et. al (2022) stated that there is no universal definition of psychological trauma, however, most sources acknowledge that trauma involves exposure to an event or series of events that adversely affects functioning and well-being.

- · Can occur at any point in someone's life
- Responses to trauma vary from no response to PTSD. Additionally, resilience can be a response to trauma as well.
- Because of the varying response to trauma and ACEs, it is important to acknowledge that trauma can impact behavior.

## Trauma-Informed Approach

Trauma-informed care (TIC) is defined as recognizing how trauma affects both learning and behavior.

- Harris and Fallout (2001) stated that TIC uses the understanding of an individual's trauma to create systems "that accommodate the vulnerabilities of trauma survivors and allow services to be delivered in a way that facilitate consumer participation. (p. 4).
- Van Diepen and Bedoyan (2024) stated, "A trauma-informed approach to supporting students entails recognizing the widespread impact of trauma, integrating this understanding into all areas of student support, and prioritizing safety, trustworthiness, choice, collaboration, and empowerment."

## **Trauma-Informed Approach**

Rajaraman et al. (2022) proposed the following four guidelines for a traumainformed approach:

- Acknowledge trauma and it's potential impact.
- $\circ$  The environment may be similar to an environment in which a traumatic event occurred.
- $\circ$  Those with a history of trauma may respond differently than those who have not experienced trauma.
- Ensure safety and trust

 $_{\odot}$  Considering where and who services take place.

 $_{\odot}$  Honoring withdrawal of assent (the "no"), promoting regulation skills, ensuring entire teams are trained.

## Trauma-Informed Approach

- · Promote choice and shared governance
  - $_{\odot}$  Allowing opportunities to make statements of assent or assent withdrawal as well as promoting student autonomy.
  - $_{\odot}$  Agreement of goals, acceptability of treatment, and criteria for success.
- · Emphasize skill building
- Promotion of skills and strategies that include self-advocacy, communication, and independence versus just reducing behaviors of concern.

## **Questions To Ask Yourself**

What are situations or activities that trigger the student?

 How can we change the situation that would make the student feel more safe and calm?

What are the actions of staff that can trigger the student?How can staff avoid or limit these actions?

What is in the student's environment at school that may feel triggering to them?

 How can we adjust the classroom environment to make the student feel more safe and calm?

What necessary interactions, situations, or instructions are triggering to the student?

• How can we adjust these to be less triggering? How can we support the student with regulation during this time?

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# Developmental Milestones

## Development

Childhood (3-10)

- By age three children should be able to calm themselves down after guardian has left them within 10 minutes.
- By age 4, children should comfort others who appear in distress and able to change their behavior based on setting
- By age 5, understand rules in play situations
- Ages 6-8, start to shift focus towards friendships and be accepted by peers.
- Ages 9-11, start to be able to engage in perspective taking.

## Development

Gestsdittir and Lerner (2008) described multiple research articles on development and stated:

• "Effortful control develops rapidly in the toddler and preschool years and a young child's difficulty in stopping a dominant response may be partly due to an immature frontal lobe; but as the brain matures through childhood and adolescence, the person becomes better at controlling attention, inhibiting behaviors, and self-monitoring." (p.206)

### Development

Adolescence (10-20)

- Gestsdittir and Lerner (2008) explained adolescence includes: "...the emergence of new cognitive structures and social conceptions, the development of physical and sexual maturity, changing relationships with family, teachers, peers, and formulation of a more sophisticated self-identity, which influences all aspects of the young person's development."
- They also stated that during this time, there is an "...increase [in] expectations that the young person is responsible for his or her own developmental path."
- Center on "controlling emotion, attention, and behavior, as well as, self monitoring and response inhibition."
- Emergence of formal operational thought: understand and form abstract ideas and formulate hypotheses surrounding outcomes.

#### Developmental Regulation Milestones

Sanchis-Sanchis et. al, (2020) summarized Zimmer-Gembeck and Skinner (2011): "The coping repertoires of children and adolescents increase with age. As children grow older, instrumental action is complimented by planned problemsolving, they are more capable of attending to and reflecting on their own internal emotional states and they are increasingly dependent on more sophisticated strategies for coping with emotions."

- Age 8 or 9: regulate emotions through cognitions or thoughts about themselves, their feelings, or others.
- Age 13-15: often show a decline in use of strategies when compared to early and late adolescent. Believed to be connected with conflict and emotional difficulties with parents.

### Developmental Executive Functioning Milestones

According to Gestsdottir and Lerner (2008) a delay in executive functioning skills may impact a child's ability to engage in self-regulation.

- Delay in reinforcement/delayed-gratification: develops during the toddler years and is an indicator of one's ability to self regulate
- In adolescence there is an increased ability to understand and engage with delayed gratification.
- "..executive functioning does not develop fully until the brain growth prototypic of adolescence occurs, and in any case, studies of the development of executive functions in childhood have only been conducted over the last 10-20 years." (p. 207)

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# **Regulation Skills**

## Self-Regulation

Nilfyr and Ewe (2025) explain that self-regulation has two primary domains:

- children's empathy, emotional self-awareness, and the appropriateness of the • affective expression.'
- "...affective lability, encompassing inflexibility, mood fluctuations, and poorly regulated negative emotions." •

Karaca and Bektas (2022) refer to Bandura's social cognitive theory to describe self regulation: Comparing an "...individuals' behavior with the internal criteria they have specified and to decide and evaluate their suitability." The further explained that it includes self-observation, self-judgement, and self-reaction.

- The authors stated that processes of self regulation can either be intentional (top-down) or automatic (bottom-up).
- It is multifaceted that "...operates through a series of secondary cognitive processes such as self-monitoring, standard setting, an evaluative judgement, self-evaluation, and emotional self-reaction." •
- Self-regulation develops through interactions with the environment.

## Self-Regulation

Gestsdottir and Lerner (2008) explain that "self-regulation pertains to all aspects of adaptations, as people alter their behaviors, as well as thoughts, attention and emotions, to react to different contexts and modulate their reactions to their contexts."

- Stressed that individuals "must have the ability to form representations of himself or herself and of others that inform the person of past experiences, offer self-evaluations, and provide directions for future actions." This skill is key to an individual being able to attain an goal.
- The authors continue to further explain self-regulation through intentional regulation and organismic self-regulation.

## **Intentional Self-Regulation**

Gestsdottir and Lerner (2008) describe intentional regulation as:

- "...contextualized actions that are actively aimed towards harmonizing demands and resources in the context with personal goals in order attain better functioning and to enhance self-development."
- · Goal-directed behaviors
- Ability to achieve a goal or not achieve a goal has implications for future goaldirected behaviors and development trajectory
- The authors indicate that individuals in adolescence are able to use intentional selfregulation successfully due to brain development and social expectations and conceptions.

## **Organismic Self-Regulation**

Our bodies' ability to regulate systems

- e.g. body temperature regulation by the hypothalamus, circadian rhythms, threshold of responsivity or quality of mood
- Fight, flight, freeze

Under no or limited control of the individual, require no additional effort of the individual to regulate

Gestsdottir and Lerner (2008) explained that organismic regulation may be more relevant during infancy and childhood and times when intentional self regulation are not fully present.

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# **Replacement Skills**

## Behavior

#### All behavior is learned.

Behavior serves a purpose (has one or more functions).

Behavior is communication.

If a behavior persists (even a problem behavior), it is being reinforced.

What we do about a behavior depends on the function not the form (what it looks like).

## **Replacement Behavior**

•Once a hypothesized function or functions of behavior has been determined, you can determine the most appropriate replacement behavior to teach the student.

•A replacement behavior is usually a new skill that we are teaching that will allow the student to gain access to same reinforcement that their behaviors of concern once did. This is a functional equivalence.

#### Identifying What Function is Maintaining Behaviors of Concern

ABC data collection includes:

- · Antecedent: What happens right before the behavior the behavior of concern occurs
- · Behavior: What the observable behavior looks like
- · Consequence: What happens after the behavior of concern occurs

Although a clear operational definition has been developed with collaboration of the team, it is important that the observer also note any unexpected antecedents or consequences that occur in the natural environment.

ABC data collection allows the team to see if there are patterns to what precede the behavior as well as what is maintaining the behavior.

This information will help confirm or disconfirm the information from indirect assessments (interviews).

## Identifying What Function is Maintaining Behaviors of Concern

Upon reviewing both the indirect and direct assessments, a hypothesized function or functions maintaining the behavior will be clear

There can be a primary and secondary function to a behavior

This can be completed within the FBA form after data collection is complete. Functions are based of the four functions of behavior from applied behavior analysis.

#### Four Functions of Behavior

Escape	Attention	Tangible	Sensory
"Social-negative reinforcement" or to escape a person, place, demand, environment, etc.	"Social-positive reinforcement" or to gain access with a person/people	"Social-positive reinforcement" or to gain access to activity, preferred items, food, etc.	"Negative or positive automatic reinforcement" or to escape or gain access to a feeling reinforced within the body, no social contact ( <i>No one</i> <i>else involved</i> ). <b>Example:</b> Engaging in head banging to relieve the pain of a toothache
<b>Example:</b> Engaging in aggression, avoids engaging in a task.	<b>Example:</b> Engaging in screaming, multiple people come into the room.	<b>Example:</b> Engaging in biting, maintains access to tablet.	

## **Selecting Replacement Behaviors**

When selecting replacement behaviors, you want to ensure that the replacement behavior is functionally equivalent to the current behavior of concern.

 This means, the replacement behavior should allow student to get access or escape to their want/need.

In order for the student to be motivated to use the replacement behavior in place of the behavior of concern, the replacement behavior must meet the following three criteria:

- Faster: the replacement behavior gains reinforcement more quickly than the behaviors of concern.
- · Easier: the replacement behavior must have a lower response effort.
- Reliable: the replacement behavior needs to be consistently responded to and honored by staff.

## Selecting a Functionally Equivalent Replacement Behavior

Escape	Attention	Tangible	Sensory
<b>Example:</b> Engaging in aggression, avoids engaging in a task	<b>Example:</b> Engaging in screaming, multiple staff come into the room	<b>Example:</b> Engaging in biting, maintains access to tablet	<b>Example:</b> Engaging in head banging to relieve the pain of a toothache.
Replacement		Replacement	
Behavior:	Replacement	Behavior:	Replacement
When presented with	Behavior:	When a preferred item	Behavior:
a non preferred task,	When a preferred	is not in reach,	When individual starts
student will ask for a	adult is in the room,	individual will request	to feel a toothache,
break (walk, go to	individual will state	item using a one word	individual will request
break area, etc.).	adult's name to gain their attention.	statement.	pain medication.

## Strategies to Promote Regulation Skills and Replacement Behavior

## Regulation Leads to Learning

Harvard University's Center on the Developing Child stated: "In early childhood, extreme stress redirects brain development away from core life skills toward automatic ("fight, flight, or freeze") responses.

• They continued to state that stress in adolescence "overloads the ability to develop and practice core life skills, leaving youth to rely primarily on their automatic responses."

Hanley (2020) introduced the term "happy, relaxed, and engaged" to discuss setting up an environment that leads to an individual feeling safe to learn.

## **Regulation Leads to Learning**

Gover et. al (2022) went on to define happy, relaxed, and engaged further:

- Happy: "Happiness should be defined individually for each learner." We can do this by finding out what our learners enjoy and love. This is likely not one single thing.
- Relaxed: "A relaxed student is one who is at ease, feels physically and emotionally safe, and understands the classroom and school expectations at any given time."
- Engaged: "It is important that students be actively engaged with materials and the people around them, relative to their skills and preferences, during reinforcement periods."

Both require explicit teaching and modeling of skills.

#### **Regulation Skills**

- Supports learning and communication.
- Skills are used to keep regulation and executive functioning available.
- May be able to engage in these skills while learning (e.g. stimming behaviors)

#### Replacement Skills

- Allows for student to meet their needs and access wants.
- Depending on the function, it may also allow for student to be able to learn and access their environment better.
- Tools used to access/escape certain environmental variables.

## **Building Rapport**

Gover et. al (2022) stated: "Taking time to understand what makes students happy likely will foster trust and improve relationships between instructors and students."

Nilfyr and Ewe (2025) also stated that strong relationships between teachers and pre-k students led to students having better regulation skills.

- "...children's self-image and self-esteem are established and shaped based on the responses they receive from significant others." (p.4)
- Creating Relationships:
  - $_{\odot}$  Engaging in preferred activities, conversations, etc.
  - $_{\odot}$  Honoring all forms of communication

## Establishing HRE

Preference Assessments: having student and caregivers communicate current preferences for the learner

- Can be a form or interview
- · Should be completed more than once

Understanding what happiness, engaged, and relaxed looks like for your learner.

Having clear signals for breaks and adult-led instruction

- Verbal cue
- Behavior Change (e.g. you sit on floor versus at a table)

Promotion of engagement:

- Individualized materials
- Varying materials on a consistent basis
- · Passive but supportive role during breaks

Gover et. al (2022)

## **Reinforcing Precursor Behaviors**

Precursor behaviors are a behavior(s) that student does that signals that a more severe behavior of concern may occur soon afterward.

It could look like:

- Threatening to engage in more severe behaviors of concern (e.g. I am going to punch you).
- Showing signs of agitation (e.g. tightening of posture, clenched fists, change in facial expression, etc.).
- Turning their body away or minimal participation in a social interaction.
- · Cursing or making offensive gestures towards others.

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## Graph of Behaviors of Concern



Van Diepen & Van Diepen, 2023

## Modeling

#### **Regulation Skills:**

#### When regulated:

- Model and role play choosing regulation skills for various situations.
- Deliver reinforcement for engagement in coping skills.

#### Co-regulation:

• Engage in selected regulation skill with student.

#### **Replacement Behaviors:**

#### When regulated:

- Model and take turns engaging in the replacement behavior
- Reinforce when students follow the model
- Peer modeling can be used as well

When in an escalation:

- Using minimal to no words, model the behavior for student.
- Can be a verbal model and immediate reinforcement to start, increasing expectation for independence as student displays mastery.

## **Contingency Map**

Priming of expectations as well as aids in promotion of decision making skills

- · Include the antecedent
- · Include the replacement behavior(s) or regulation skill
- Include reinforcement
- Include the behaviors of concern
- · Include no access to reinforcement

Can be used to redirect instead of verbal redirection

Can be made with student input

© Lille Miss Kim's Class break V Ask for help Ask for a break work When I am presented with work Tear up my work Do nothing Task Record · Wed· Thurs· Mon Tues. Wed Thurs. Fri Mon Tues. Fri Mon· Tues. Wed Thurs. Fri

## In Summary

When determining replacement behaviors and regulation skills, it is important to remember:

- Our learners' experiences impact their ability to engage in regulation skills and replacement behaviors.
- Our expectations of replacement and regulations skills may not be developmentally appropriate for our learners.
- Replacement and regulation skills are successful when they are meaningful to our learners.
- While regulation skills may be needed for a learner to be able to be engaged, it may not be the functionally equivalent replacement behavior.

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# Thank you! Any questions?

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