Using Executive Function Based Interventions to Improve Self-Regulation of Students with Behavior Problems

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Advance Organizer

I. Characteristics of students with behavior problems

II. Self-regulation (SR)

III. The SR and Executive Function (EF) Link

IV. Use of EF based cognitive-behavioral interventions (CBIs) to improve student self-regulation

V. Examples of EF and SR based CBI approaches at 3 tiers

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Typical Students vs. Students with Behavior Problems

Typical Students	Students with Behavior Problems
•Compare immediate cues to those they are familiar with •Accurately infer what others might be thinking/intending •Generate pro-social alternatives •Perform chosen behavior by recalling task steps and implementing them appropriately	•Have difficulty interpreting cues / have counterproductive schemas •Concentrate more on hostile or negative cues •Generate fewer pro-social alternatives •Fail to perform pro-social alternatives because of impulsive choices

Dodge & Tomlin (1987); Rubin, Bream, & Rose-Krasnor (1991)

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Students with Behavior Problems: Self-Regulation Failure

- Successful accomplishment of developmental tasks requires self-regulation (SR).
- Many students develop patterns of serious and chronic failure to regulate cognition & emotion.
- Poor SR has even been called the “hallmark” of psychopathology!

Beauchaine, Gatzke-Kopp, & Mead (2006)

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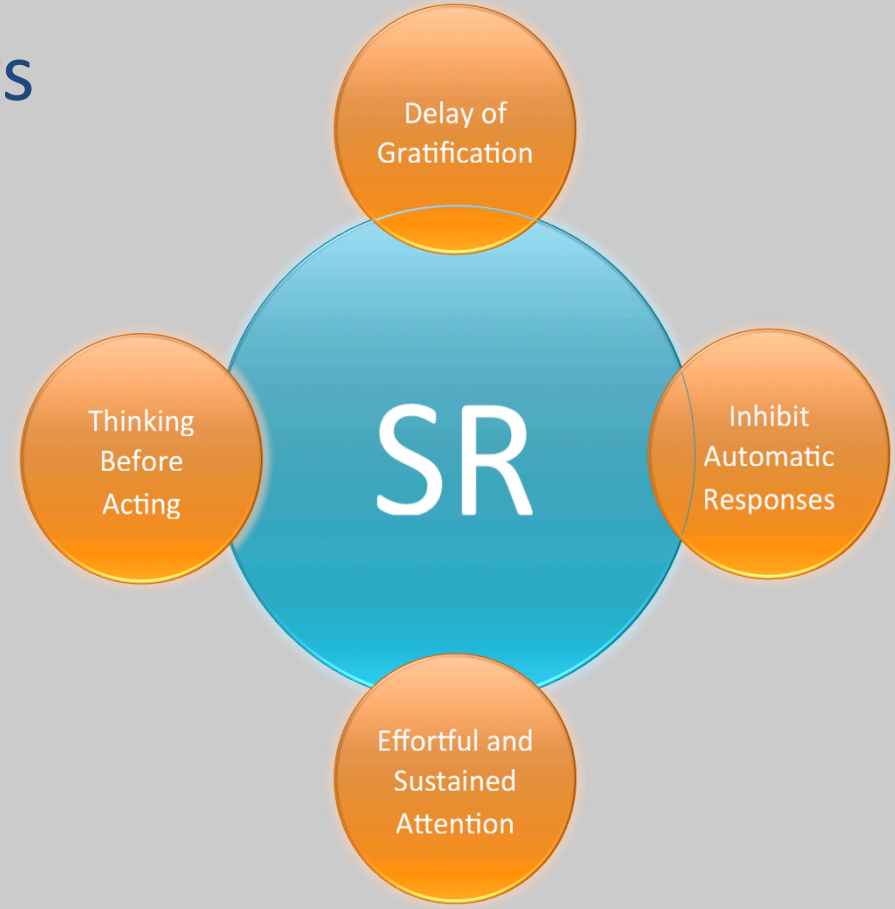
Self-Regulation Defined

Self-Regulation (SR) refers to a variety of capacities involved in regulating emotion & behavior:



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Classic SR Task

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Self-Regulation Skills

Learning to:

- Manage thoughts and emotions
- Inhibit impulsive reactions and use self-talk to guide behavior (Stop & Think!)
- Act responsibly, even when parents or teachers aren't around

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Self-Regulation & Social-Emotional Learning

By teaching SR skills, social-emotional learning (SEL) can be strengthened to help students:

- Achieve success in learning
- Form positive relationships
- Solve everyday problems
- Adapt to changing social & emotional demands

Positive SEL relies on healthy development of neurocognitive & biological factors important for SR.

Elias et al (1997)

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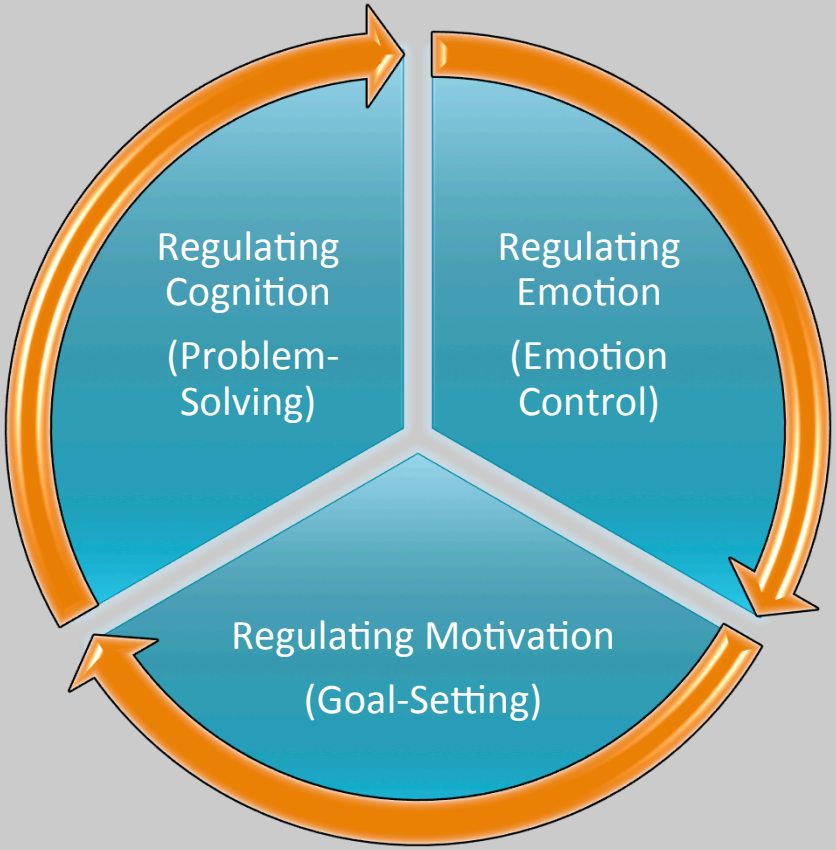
Interconnected Domains of Self-Regulation



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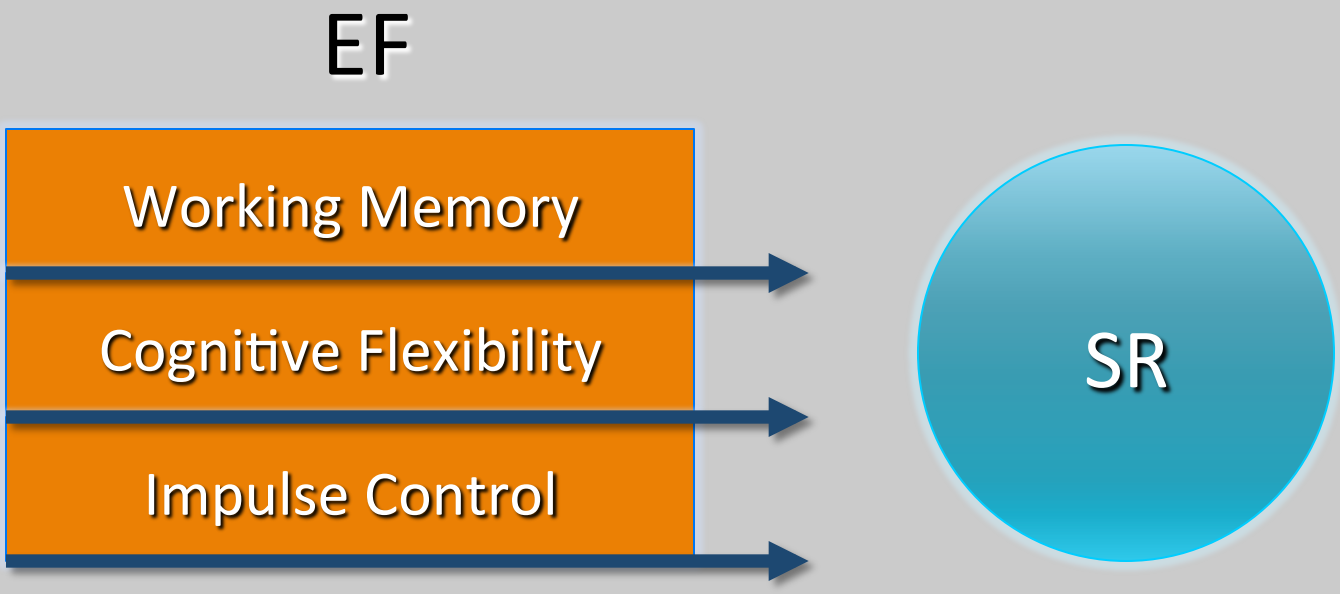
Basis of Self-Regulation: Executive Function

Although there is no clear definition of unified EF, recent evidence (e.g., Miyake et al. 2000) confirms three distinct processes that may be used when engaging in SR:



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Executive Function Defined

Ability to regulate emotion, motivation, and cognition based on neurocognitive capacities:

- *Holding and using* information (Working Memory)
- *Shifting thinking* (Cognitive Flexibility)
- *Stopping* automatic responses (Inhibition)

Collectively referred to as "Executive Functions" (EF)

Miyake et al (2001)

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EF at Work

- EF is recruited when situations/stimuli are new or novel. As behavior is learned, EF is no longer necessary.

  In US Green Light Crosswalk ➡ Look Left

  In UK Green Light Crosswalk ➡ Look Right

- Requires
  - Holding the rule in mind (working memory)
  - Flexible rule use (shift)
  - Inhibition of impulse to look left (impulse control)

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SR-EF Connections

- Self-regulatory tasks require the use of EF skills
- Skills necessary for successful SR & social interactions depend on adequate development of EF
- EF development coincides with brain maturation, with preschool and adolescence shown to be "sensitive" periods of growth and reorganization
  - These offer windows of opportunity to intervene

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The Importance of Targeting EF and SR

- EF is theoretically linked to SR and amenable to intervention
  - Intervention should target EF and SR to improve students' social-behavioral outcomes
- Students with behavior problems are in need of interventions that target EF and SR:
  - Delayed or insufficient EF maturation is evident in social/behavioral problems of students with behavioral difficulties.

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The Importance of Targeting EF and SR

Cognitive-Behavioral Interventions (CBIs):

- The child is the primary change agent.
- Verbalization (self-talk) is the primary component.
- Modeling is a key instructional procedure.
- SR is the focus where students tap underlying EF skills.

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CBI: 3 Tiers of Intervention

- ***Universal*** (Tier 1) preventive interventions:

  Provided to all individuals within a certain population, such as all 5th graders in a school

- ***Indicated*** (Tier 2) preventive interventions:

  Target high risk individuals, such as aggressive school children

- ***Selected*** (Tier 3) interventions:

  Target individuals identified with serious behavior problems

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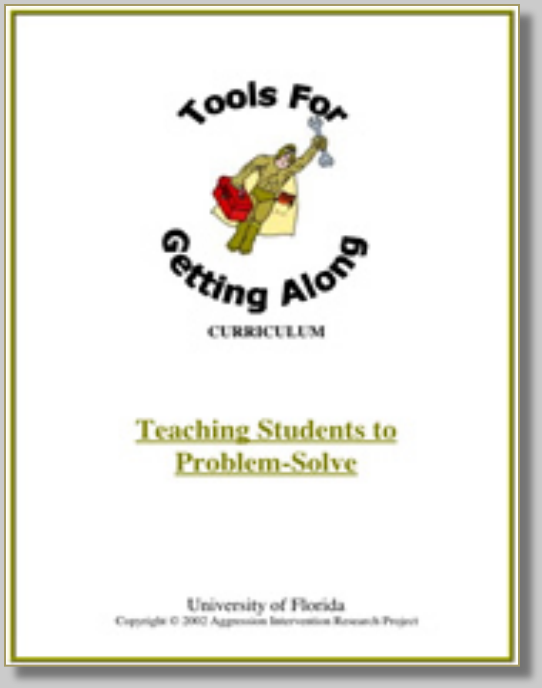
Tools for Getting Along: Tier 1 (Universal) CBI



- Efficacy & Replication (Goal 3) study funded: National Center for Special Education Research, *Institute of Education Sciences*, U.S. Department of Education R324B06029
- **Included in the *National Registry of Evidence-based Programs and Practices* & U.S. Department of Education's *What Works Clearinghouse***

NREPP SAMHSA's National Registry of Evidence-based Programs and Practices

ies WHAT WORKS CLEARINGHOUSE

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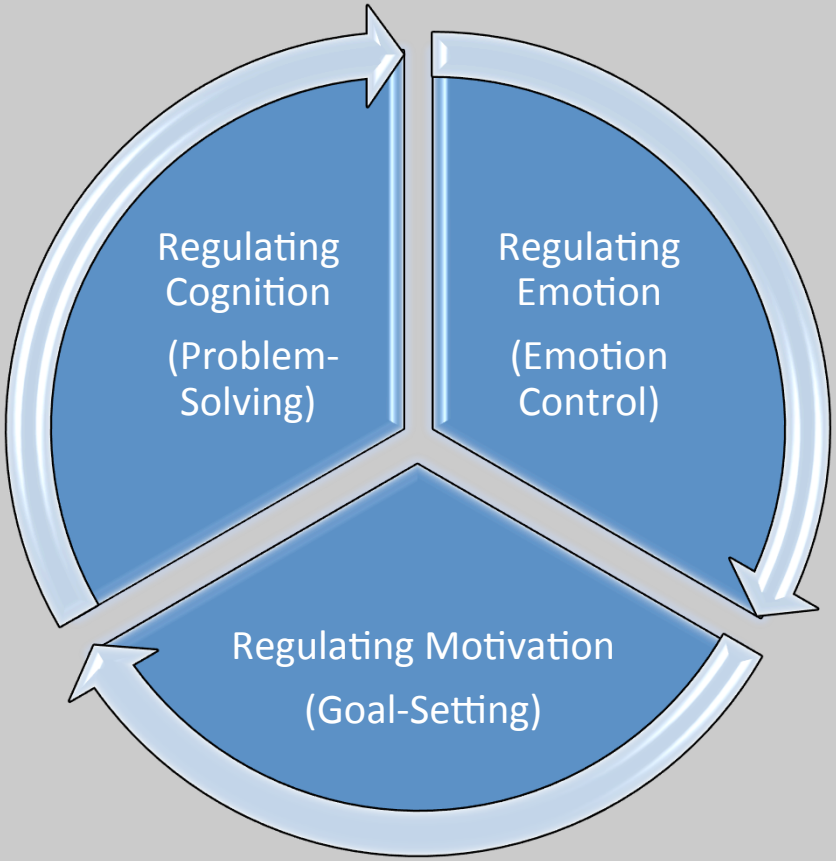
Self Regulation Domains of *Tools for Getting Along*



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Tools for Getting Along

Teaching Students to Problem Solve

- To prevent or reduce students' aggressive responses to anger provoking situations using:
  - 6-step social problem-solving framework
  - 21 lesson core curriculum with 6 booster lessons
  - Integrated review, modeling, rehearsal (role-play)

Features

- Paired or small group instructional options
- Tool Kit as a self-monitoring device
- On-the-Spot Assessment to promote generalization

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The Problem Solving Steps in TFGA

I . . .

1. know I'm angry or frustrated.
2. calm down.
3. think about the cause.
4. think about what I could do.
5. try a solution.
6. think about how it turned out.

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Findings from an IES Funded RCT

- All students taught TFGA had
  - a more positive approach to problem solving
  - a more rational problem-solving style
- Students with higher baseline risk had
  - Better teacher-rated self-regulation
  - Lower teacher-rated proactive aggression
  - Lower self-reported trait anger and outward expression of anger

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Social-Emotional Learning Foundations: Tier 2 (Indicated) CBI

SELF
Social-Emotional Learning Foundations

Development & Innovation (Goal 2) study funded: National Center for Special Education Research, *Institute of Education Sciences*, U.S. Department of Education R324A100020

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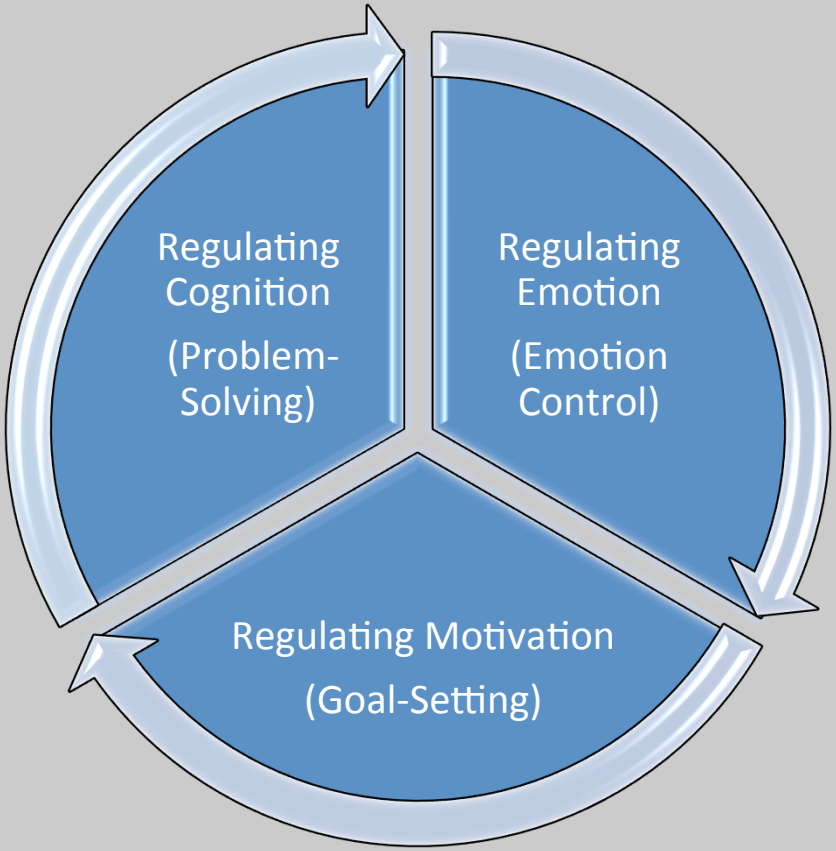
Self-Regulation Domains of *SELF*



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SELF Curriculum Structure

- 51 Kindergarten & 53 1st Grade Lessons
- 5 main K-1 grade units parallel 5 SEL competencies
- Each topic within a unit includes 3 lesson types built around selected storybook:
  - Whole group interactive storybook reading
  - Small group focused dialogic reading & targeted vocabulary development
  - Small group application activities

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SELF Intervention

Linking SEL and literacy:

- Promote language development related to emotions & behavior
- Model self-talk related to SR of emotions/ behavior and listening/reading comprehension
- Prompt guided & independent practice of social-emotional skills

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Self-Talk & Self-Regulation of Behavior

We help children use **self-talk** to **monitor** their social interactions:

- Attend to and understand their own feelings
  (How am I feeling? I think I feel kind of scared.)
- Attend to and understand the feelings of others
  (Can I tell how he's feeling? His face looks sad. Maybe I can help.)
- Understand that actions have consequences
  (Do I need to watch what I'm saying? She looks upset. I might have hurt her feelings.)
- Choose actions that will help them reach their goals (problem solving)
  *(How can I get Wendell to stop being bossy? I can tell him about a game **I** want to play.)*

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Self-Talk & Story Comprehension

- We help children use **self-talk** to **monitor** their understanding of spoken and written language.
  - Attend to what is happening in a story
    (Do I understand what the teacher is saying?)
  - Anticipate what might happen next
    (I wonder if Katie's going to get angry!)
  - Understand the structure of a story
    (Is this problem going to get solved?)
  - Connect story narrative to their own experience
    (Am I like her? Yes! I felt just like that when I lost my favorite bear!)

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I Control:
Tier 3 (Selected) CBI

Development & Innovation (Goal 2) study funded: National Center for Special Education Research, *Institute of Education Sciences*, U.S. Department of Education R324A110182

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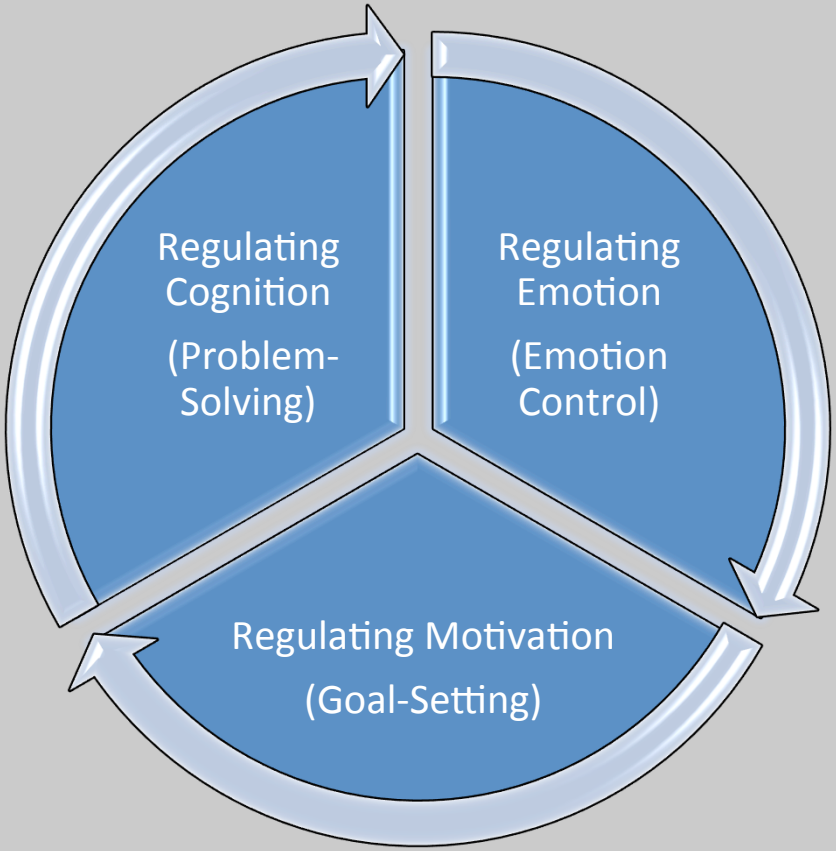
Self Regulation Domains of *I Control*



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Purpose of *I Control*

- To develop an intervention focused on building EF skills for middle school students with EBD
- Combines direct instruction of EF skills (working memory, inhibition, cognitive flexibility) & instruction in contextualized self-regulation (goal setting, emotion regulation, problem solving)

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I Control Curriculum Structure

- **U1** - Introduces EF skills
- **U2** - Goal commitment, planning, & completion
- **U3** - Emotion characteristics, thoughts, actions, & consequences
- **U4** - Teaches PS & connects to Units 2 & 3

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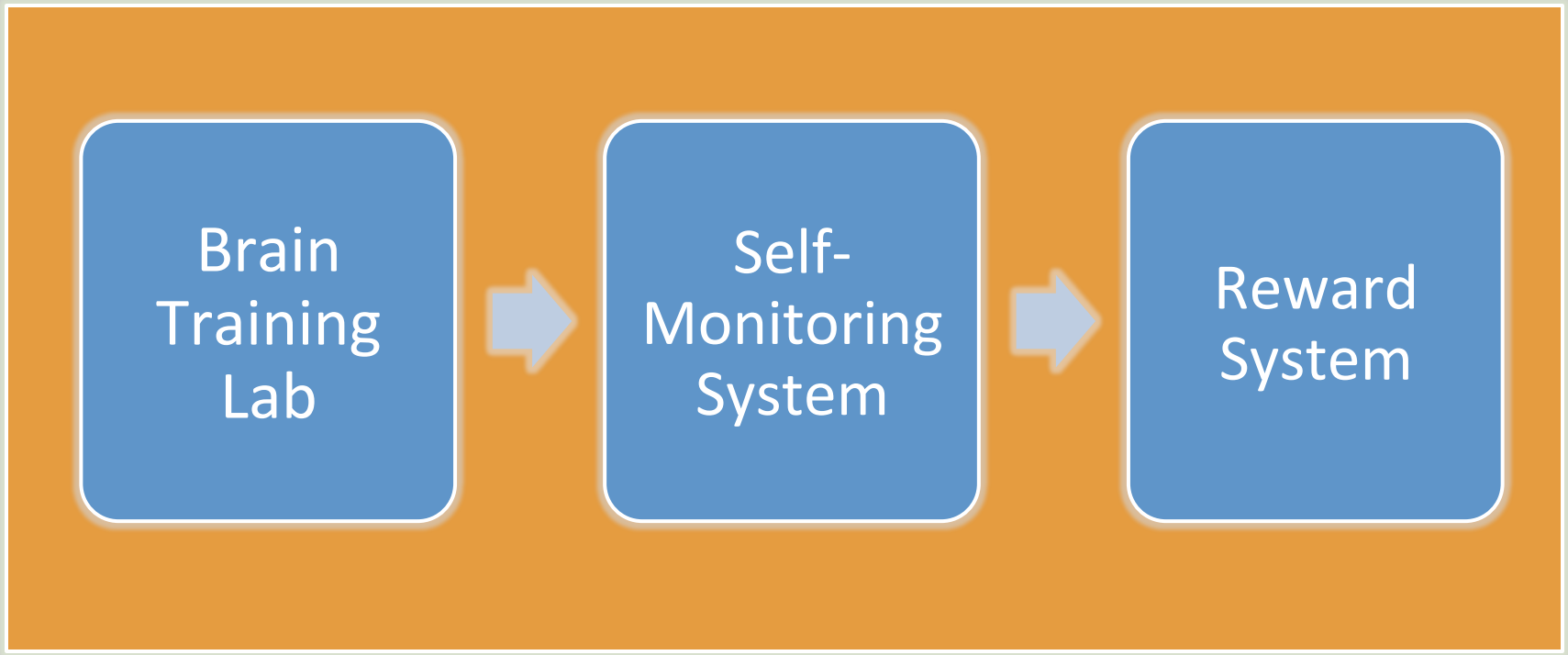
Brain Training Lab Components



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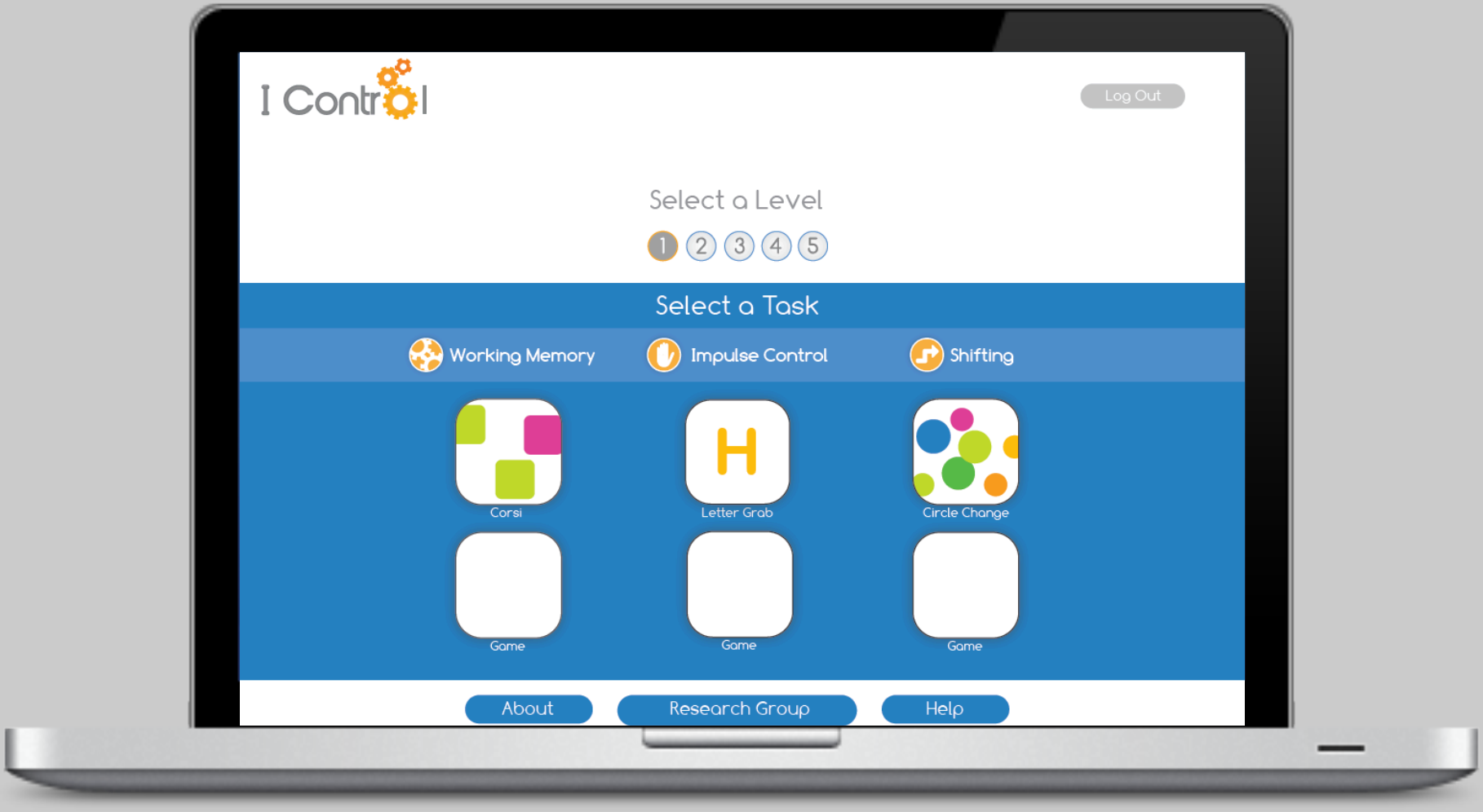
Brain Training Lab



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Brain Training Lab

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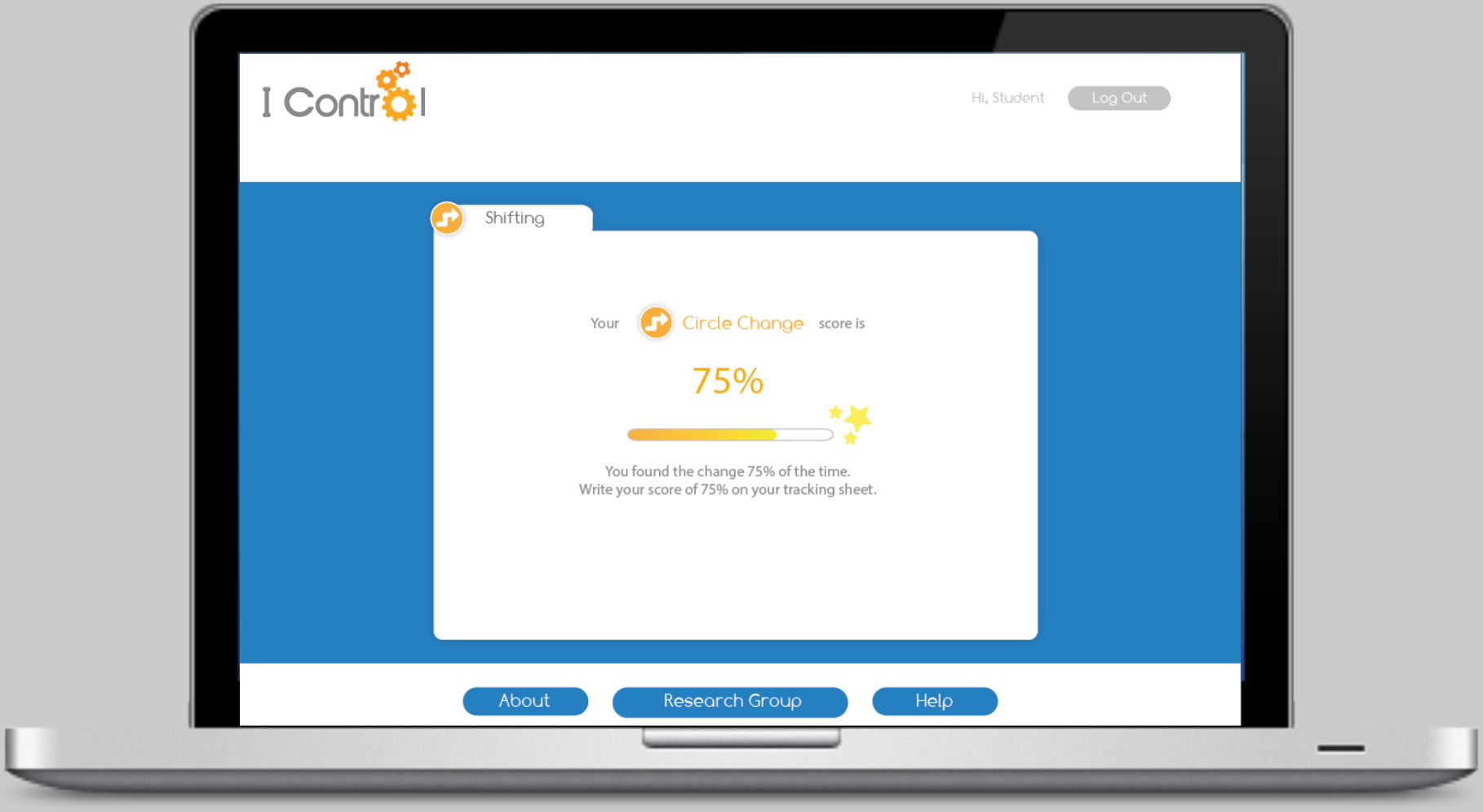
Brain Training Lab



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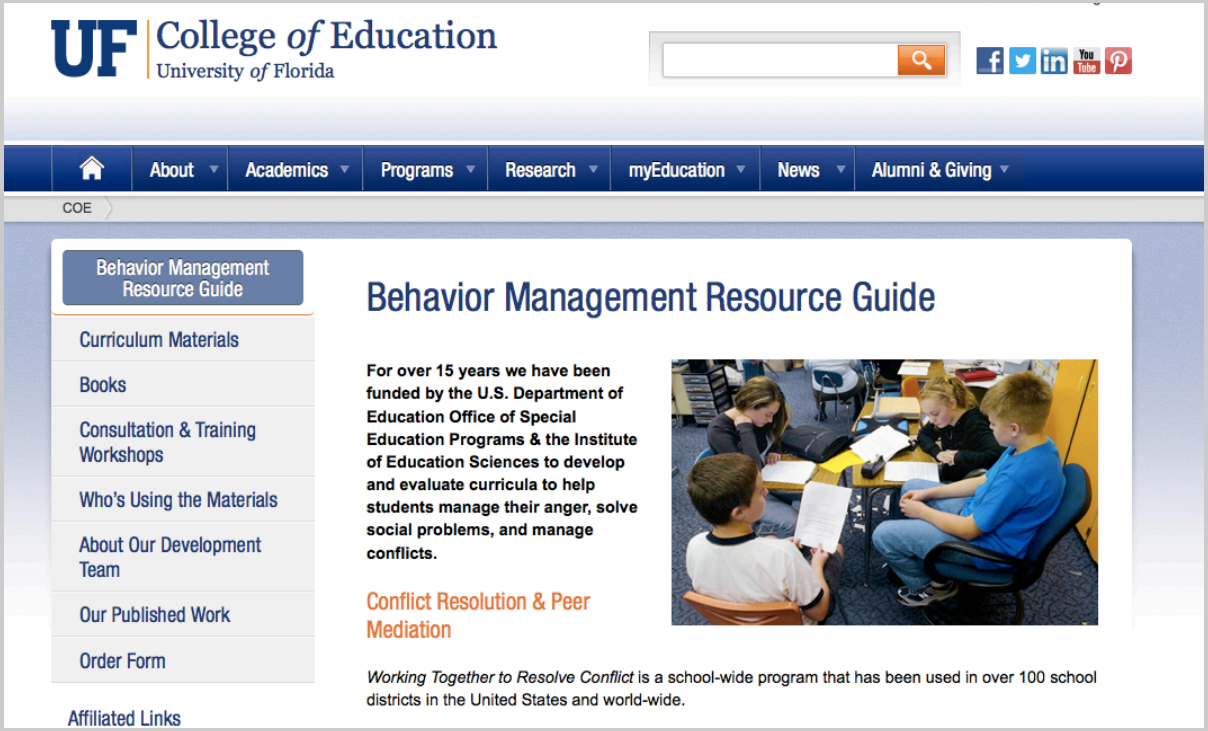
Behavior Management Resource Guide



https://education.ufl.edu/behavior-management-resource-guide/

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Questions?

Thank you!

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