Techniques to Help Students Improve Emotional Self-Regulation and Learning

Dr. Cyrus Shaoul

Associate Professor, Senior Academic Researcher, Landmark College Institute for Research and Training

With input from

Dr. M. Banerjee, Dr. R. Bryck, L. Hecker
and Dr. I. Dahlstrom-Hakki (the LCIRT team)
Outline:

I) Motivations

II) Foundational Concepts

III) Understanding Emotion Regulation

IV) Putting it into Practice
Experiential Learning Activities

Interspersed!
I) Motivation
Motivations: Why this topic?

• Our Shared Mission
• Human flourishing
• Gaps in the Science
Motivations: Why this topic?

• Bolster the link between science and practice.
• Draw the line between science and quasi-science.
Motivations: My background.

- My research into the emotional nature of words.
- My experience with anxiety in my classroom and its devastating effects.
Activity: Setting intention.

Write down one thing that you hope to learn today.
II) Fundamental Concepts
What are emotions?
What are emotions?

• Hard to define! Feelings?
• I feel chilled.
• I feel angry (towards someone or something).
• For some emotions, there is a target (even if it is only in our heads).
Big Picture Questions

Emotions: are they social behaviors?

Emotions: are they embodied?

Emotions: are they adaptive?
Key Emotion Scientists

Paul Ekman: emotions are discrete, measurable, and physiologically distinct.

Antonio Damasio and Hanna Damasio: Emotions are mental experiences of body states.
Somatosensory Feedback

Information flowing from the body to the brain.

Allows the brain to discriminate between emotional states.
Activity: Body Maps

1) Pick one of the emotions on the following slide. Write the name of this emotion on your sheet.

2) Mark the drawing of the body as instructed. Note: you do not need to make any marks if you feel that there is no change in activity.
Emotion and Body Map: http://emotion.becs.aalto.fi/emotion_words/
over 435,000 responses!

For the pictures below, evaluate how the activity of your body changes when you feel...

Anger

For this body, color the regions whose activity you feel increasing or getting stronger

emBODY instrument
Fig. 2. Bodily topography of basic (Upper) and nonbasic (Lower) emotions associated with words. The body maps show regions whose activation increased (warm colors) or decreased (cool colors) when feeling each emotion. ($P < 0.05$ FDR corrected; $t > 1.94$). The colorbar indicates the $t$-statistic range.
Dimensions: Valence (aka Pleasantness) and Activation (aka Intensity aka Arousal)
Talk to me later about: science and quasi-science!
III) Emotion Regulation
What is Regulation?

- Something overt
- Something we are conscious/aware of
- Something intentional
- An effortful change of state.
- Two possible directions: Up-regulation vs Down-regulation
Nummenmaa et al, 2013
Group Activity

How do you know if a someone you work with needs to improve his ability to regulate his emotions?

(1 minute)
It’s an everyday occurrence

- **Internal Emotion Regulation**
  - Cheering yourself up by doing something enjoyable.
  - Making yourself angry by watching the news.

- **External Emotion Regulation**
  - Making a colleague angry by criticizing him or her;
  - Calming down an over-excited child.
For better or worse!

• To make you feel better:
  • keeping calm when provoked, trying to remain positive in the face of bad news (down-regulate negative emotion)
  • being excited, rather than just mildly pleased, about a classmate’s success (up-regulate positive emotion)

• To make you feel less better:
  • making yourself anxious before an important examination in order to improve your performance (up-regulate negative emotion)
  • stifling laughter when witnessing another’s misfortune (down-regulate positive emotion)
Core question

How does “thinking” interact with “feeling”?

Extra credit: name that emotion!
Emotion Regulation and Performance

- Classroom
- Math anxiety
- Social anxiety
- Test anxiety
- Office
- Performance anxiety
- Social anxiety
- Sports
- Performance anxiety
The Role of Emotion Regulation and Children's Early Academic Success

Paulo A. Graziano*, Rachael D. Reavis, Susan P. Keane, and Susan D. Calkins
University of North Carolina at Greensboro, Department of Psychology, P.O. Box 26170, Greensboro, NC 27402-6164, United States

Abstract

This study investigated the role of children's emotion regulation skills and academic success in kindergarten, using a sample of 325 five-year-old children. A mediational analysis addressed the potential mechanisms through which emotion regulation relates to children's early academic success. Results indicated that emotion regulation was positively associated with teacher reports of children's academic success and productivity in the classroom and standardized early literacy and math achievement scores. Contrary to predictions, child behavior problems and the quality of the student teacher relationship did not mediate these relations. However, emotion regulation and the quality of the student-teacher relationship uniquely predicted academic outcomes even after accounting for IQ. Findings are discussed in terms of how emotion regulation skills facilitate children's development of a positive student-teacher relationship and cognitive processing and independent learning behavior, both of which are important for academic motivation and success.
Emotionality, Emotion Regulation, and School Performance in Middle School Children

Gail Gumora and William F. Arsenio
Ferkauf Graduate School of Psychology, Yeshiva University, Bronx, NY, USA

This research investigated the connections of middle school students' emotional dispositions and academic-related affect with their school performance. One hundred three 6th–8th grade students completed three self-rated assessments regarding: (a) their academic competency; (b) affective tendencies (both mood and emotion regulation); and (c) negative emotions experienced during school-related tasks. Teachers assessed students' positive and negative moods, and schools provided
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<tr>
<th>Predictors added at</th>
<th>Step 1</th>
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<td>Step 1 ($R^2 = 0.424$, $F_{change} = 36.83^{***}$)</td>
<td>Achievement scores</td>
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<td>6.80^{***}</td>
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<td>7.34^{***}</td>
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<td>Academic competence</td>
<td>0.24</td>
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<td>3.93^{**}</td>
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<td>Step 2 ($R^2 = 0.572$, $F_{change} = 8.35^{***}$)</td>
<td>DOTS-R-emotion reg.</td>
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<td>3.01^{**}</td>
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<td>PANAS-positive mood</td>
<td>0.27</td>
<td>3.76^{***}</td>
<td>0.26</td>
<td>3.64^{***}</td>
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<td>PANAS-negative mood</td>
<td>$-0.23$</td>
<td>$-3.36^{**}$</td>
<td>$-0.27$</td>
<td>$-3.85^{***}$</td>
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<td>DOTS-R-negative mood</td>
<td>$-0.18$</td>
<td>$-2.35^{*}$</td>
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| Step 3 ($R^2 = 0.574$, $F_{change} = 4.59^{*}$) | Negative academic affect | $-0.18$ | $-2.14^{*}$ |}

$R^2$ and $F_{change}$ are shown for the entire step; the $B$ and $t$ are for each predictor. The DOTS-R measures were self-ratings and the PANAS measures were teacher ratings.

* $p<.05$.
** $p<.01$.
*** $p<.001$. 

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Activity: Name some emotion regulation strategies!

You have 3 minutes.

GO!
Hot Topic

Hot topic in the popular press and education media: the importance of “emotional intelligence”, “social-emotional skills”, “grit”.
Testing for Joy and Grit? Schools Nationwide Push to Measure Students’ Emotional Skills

By KATE ZERNIKE  FEB. 29, 2016

SAN FRANCISCO — The fifth graders in Jade Cooney’s classroom compete against a kitchen timer during lessons to see how long they can sustain good behavior — raising hands, disagreeing respectfully and looking one another in the eye — without losing time to insults or side conversations.

As reward for minutes without misconduct, they win prizes like 20 seconds to kick their feet up on their desks or to play rock-paper-
Styles of Emotion Regulation

Do you know any?
Rumination (aka Concentration)
Suppression
Distraction
Styles of Emotion Regulation

• Rumination (thinking about the event, getting more aroused.)
• Suppression (faking a smile when angry)
• Distraction (turning on the TV after an upsetting phone call)
• Reappraisal (hold on to this one for a second)
• Others
Reappraisal

- Often called cognitive reappraisal or cognitive reframing.
- Can be activated with verbal suggestions.
- Robust and broadly effective
- Useful in both clinical and non-clinical contexts.

“You don’t get frustrated because of events, you get frustrated because of your beliefs.” - Albert Ellis, pioneer in Rational-Emotive and Cognitive Behavior Therapy (RE & CBT)
Two kinds of Reappraisal

1: Come up with a less negative interpretation of the picture content
Two kinds of Reappraisal

2: Increase your sense of objective distance, viewing pictured events from a detached, third-person perspective.
Example of reappraisal in a common research paradigm

- I sat at a computer and viewed a series of photographs, each preceded by one of two words: look or reappraise. Look was my cue to respond naturally without trying to change my feelings. Reappraise told me I should "actively reinterpret" the photo, using my imagination to spin another, less emotional scenario that could have resulted in the same image.

- The researcher had warned me to eat an early, light lunch, and I immediately realized why: I gasped at the sight of a man's hand from which most of the fingers had been freshly hacked off. But my instruction had been to reappraise, so I forced myself to ask whether this image might actually be a still from a horror movie. Magically, the moment I imagined it was a film prop, the raw flesh seemed to look a bit like plastic, and I felt myself exhale.
Dealing With Feeling: A Meta-Analysis of the Effectiveness of Strategies Derived From the Process Model of Emotion Regulation

Thomas L. Webb, Eleanor Miles, and Paschal Sheeran
University of Sheffield

The present meta-analysis investigated the effectiveness of strategies derived from the process model of emotion regulation in modifying emotional outcomes as indexed by experiential, behavioral, and physiological measures. A systematic search of the literature identified 306 experimental comparisons of different emotion regulation (ER) strategies. ER instructions were coded according to a new taxonomy, and meta-analysis was used to evaluate the effectiveness of each strategy across studies. The findings revealed differences in effectiveness between ER processes: Attentional deployment had no effect on emotional outcomes ($d_+ = 0.00$), response modulation had a small effect ($d_+ = 0.16$), and cognitive change had a small-to-medium effect ($d_+ = 0.36$). There were also important within-process differences. We identified 7 types of attentional deployment, 4 types of cognitive change, and 4 types of response modulation, and these distinctions had a substantial influence on effectiveness. Whereas distraction was an effective way to regulate emotions ($d_+ = 0.27$), concentration was not ($d_+ = -0.26$). Similarly, suppressing the expression of emotion proved effective ($d_+ = 0.32$), but suppressing the experience of emotion or suppressing thoughts of the emotion-eliciting event did not ($d_+ = -0.04$ and $-0.12$, respectively). Finally, reappraising the emotional response proved less effective ($d_+ = 0.23$) than reappraising the emotional stimulus ($d_+ = 0.36$) or using perspective taking ($d_+ = 0.45$). The review also identified several moderators of strategy effectiveness including factors related to the (a) to-be-regulated emotion, (b) frequency of use and intended purpose of the ER strategy, (c) study design, and (d) study characteristics.

Keywords: emotion regulation, reappraisal, suppression, distraction, concentration
Labeling the emotion and the cues

• We label the feeling, saying in our mind or, if appropriate, aloud, statements such as "I am angry" or "I am nervous."

• This automatically reduces arousal.

• It is called "labeling the Emotion."

• Emotion cues (aka triggers) are also prevalent in our environment: sad faces, a speaker's podium, and many others

• Labeling the cues is another part of cognitive reappraisal: "Microsoft Word says that it cannot save my file." "I am exasperated." "I feel helpless." "I am angry." Do you feel better now?
What resources does regulation consume?
Self-Control Relies on Glucose as a Limited Energy Source: Willpower Is More Than a Metaphor

Matthew T. Gailliot, Roy F. Baumeister, C. Nathan DeWall, Jon K. Maner, E. Ashby Plant, Dianne M. Tice, and Lauren E. Brewer
Florida State University

Brandon J. Schmeichel
Texas A&M University

The present work suggests that self-control relies on glucose as a limited energy source. Laboratory tests of self-control (i.e., the Stroop task, thought suppression, emotion regulation, attention control) and of social behaviors (i.e., helping behavior, coping with thoughts of death, stifling prejudice during an interracial interaction) showed that (a) acts of self-control reduced blood glucose levels, (b) low levels of blood glucose after an initial self-control task predicted poor performance on a subsequent self-control task, and (c) initial acts of self-control impaired performance on subsequent self-control tasks, but consuming a glucose drink eliminated these impairments. Self-control requires a certain amount of glucose to operate unimpaired. A single act of self-control causes glucose to drop below optimal levels, thereby impairing subsequent attempts at self-control.

Keywords: self-regulation, glucose, attention, emotion regulation, prejudice
Evolutionary reasons why regulation is difficult
Is there an optimal strategy?

• Regulation can be intentional, but it can also be automatic (and harder to influence with intention).

• Context is very important. Automatic strategy selection is sensitive to the context of the moment.

• Automatic regulation may be better than conscious regulation in some ways (uses less resources, prevents rebounds), but may be hard to learn.
Learning, Memory and Affect

• Affective State impacts learning in multiple ways

• Fear states can improve memory performance... (but only for a small set of items that were present during the fearful situation)

• Fear may be detrimental to the non-emotion related content for a period of time post-trauma.

• Pleasant valence is better for memory that unpleasant valence.
Activity: Discuss

- How might each of the following influence emotion regulation strategy usage?
  - Personal history
  - Diagnosis
  - Social network
  - Genetic predisposition

- What are the effects of poor emotion regulation on the learning that happens at Greenwood?
IV) Putting it into Practice
Emotion Regulation at Landmark

- Many students have had negative academic experiences before arriving at Landmark.
- Each person has particular emotion cues and automatic strategy choices.
- The work students do at Landmark and the social interactions can cause intense arousal of emotions (both positive and negative).
- We have see evidence where poor emotion regulation has hampered learning and assessment.
Do you regulate your own emotions when working with people (students, colleagues, etc)? Why?

Take a minute to discuss and write down at least 1 reason.
Are all strategies equally effective?

- Emotion regulation strategies often determine academic outcomes for students.
- The timing of their application and the level of use highly relevant.
- Response-focused emotion regulation strategies were negatively related to academic engagement in the classroom. Antecedent emotion regulation strategies were positively correlated with student personal feeling of competence (Fried, 2010).
- Other research has showed that overuse of certain strategies, particularly suppression strategies, seemed to have a cost, usually to the working memory (Baumeister, Bratslavsky, Muraven & Tice, 1998).
- Depression may also result from the overuse of suppression (Kuhl & Fuhrmann, 1998)
Reappraisal strategies: Other variations.

Fried studied 200 Australian middle schoolers

Variations on reappraisal from self-report:

1) projection strategies: Thinking about how the student will feel on completion of the task (for example, “I think about how I will feel when I have completed the task”), or the consequences of doing poorly or well (for example, “I think about how annoyed my parents will be if I don’t do well at school” or “I think about what I will be able to do if I do well at school”), and

2) self-talk strategies — those related to building up confidence at the beginning of a learning task (for example, “If I am feeling hesitant in class, I tell myself You can do it!). They also used response-focused strategies such as thinking about other things to make them feel better.
How can we address the development of emotion regulation?

- Create expressive environments, which have been found to positively develop the emotion regulation capacity of the individual.
- Students who are more skilled at using emotion-related language and understanding emotional experiences may be better at regulating their own arousal during distressing situations (Eisenberg, Cumberland & Spinrad, 1998).
- Expression of emotions may act as an early regulation strategy, relieving the need to employ strategies at a later stage (Weare, 2004).
Teacher Support (1)

• Teacher support in the classroom can influence emotion regulation development. When students feel emotionally and academically supported by their teacher, they are more likely to use self-regulated learning strategies (Ryan & Patrick, 2003).

• Student perception of teacher support has a direct effect on how motivated and interested students feel in the classroom (Wentzel, 1998).

• Teacher support made a significant contribution to the prediction of the use of antecedent emotion regulation strategies (Fried, 2010).
Teacher Support (2)

• Teacher support can be classified as either controlling or autonomy supportive. An autonomy supportive teaching style is when students are encouraged to think for themselves, make many of their own decisions and have some control over their own learning (Reeve, Jang, Carrell, Jeon & Barch, 2004).
• An autonomy supportive teaching style enables students to regulate aspects of their learning, including emotions (Zimmerman & Lebeau, 2003).
• Students are more successful and happier at school if they are encouraged to be autonomous; the degree of autonomy allowed depends on the student’s stage, age, personality and attitudes (Wubbels, Brekelmans & Hooymayers, 1991).
Emotion Talk (1)

• Talking about emotional experience can help a students to build a coherent body of knowledge about emotional expressions, situations, and causes (Denham & Kochanoff, 2002).

• Emotion talk gives students a tool to use in emotion regulation, allowing them to separate impulses from purposeful behavior (Thompson, 1991).
Emotion Talk (2)

• In addition, faculty/staff can learn a considerable amount by talking to individual students about their emotions as the need arises. For example, the teacher can learn about what the student values (Op 't Eynde, 2004).

• Having the opportunity to develop emotion knowledge through supportive forums can not only assist faculty/staff to understand themselves and what is happening with their students, but can also assist them in their own emotion regulation (Op 't Eynde, 2004).
A feeling of Belonging

• Feelings of belonging can be enhanced in the classroom through collaborative learning (Korinek, 1999).
• In addition, collaborative learning situations allow students to regulate their individual emotions and those of the group. This is because in collaborative learning situations students are required to constantly communicate and negotiate with other group members. (Jarvela, Hurme & Jarvenoja, 2007).
Learning in Context

• Socially shared learning tasks may also provide an opportunity for the development of new strategies for motivation and emotion regulation, strategies that may not be within the repertoire of the individual (Jarvenoja & Jarvela, 2009).

• Problem-based learning or inquiry-based learning contexts, often undertaken in a collaborative manner, can assist in the development of self-regulated learning strategies. They allow students the autonomy to control their learning and often expose students to emotional ambiguity (Hmelo-Silver, 2004).
How else can we address the development of emotion regulation?

- Faculty and staff should model strategies that can be used by students (Pincus & Friedman, 2004). Faculty and staff need a firm intellectual understanding of self-regulated learning in order to encourage students to develop emotion regulation skills.

- Create a school-wide focus on the importance of emotions and emotion regulation, framing the pedagogy and curriculum. (Hoffman, 2009)

- School and classroom environments that are structured around opportunities for expressivity, teacher autonomy support and a sense of belonging are conducive to the healthy development of student emotion regulation strategies.
Stereotype Threat and Emotion Regulation

There is strong evidence that stereotype threat reduces performance by sapping executive resources.

Students who feel stereotype threat often attempt to control their expressions of anxiety, causing them to perform poorly on cognitive tests.

When these students were instructed to reappraise their situation, performance on the tests improved. (Johns et al. 2008)

We strongly advise you to practice reducing or eliminating stereotype threat!
Mindfulness and Emotion Regulation

Mindfulness is the capacity to remain mindfully aware at all times, irrespective of the apparent valence or magnitude of any emotion that is experienced.

Mindfulness meditation has been shown to facilitate attentional self-regulation and emotion regulation (Kabat-Zinn, 1994).

This is likely from learning to accept, rather than reflexively act on, thoughts and emotions.

Cognitive reappraisal: thoughts and emotions exist, and must be acted upon.

Mindful emotion regulation: All mental phenomena are merely mental events, and thus do not need to be acted upon. (Chambers et al, 2009)
Inside the Mindful Mind: How Mindfulness Enhances Emotion Regulation Through Improvements in Executive Control

Rimma Teper, Zindel V. Segal, and Michael Inzlicht

Abstract
Although the psychological benefits of mindfulness training on emotion regulation are well-documented, the precise mechanisms underlying these effects remain unclear. In the present account, we propose a new linkage between mindfulness and improved emotion regulation—one that highlights the role played by executive control. Specifically, we suggest that the present-moment awareness and nonjudgmental acceptance that is cultivated by mindfulness training is crucial in promoting executive control because it increases sensitivity to affective cues in the experiential field. This refined attunement and openness to subtle changes in affective states fosters executive control because it improves response to incipient affective cues that help signal the need for control. This, in turn, enhances emotion regulation. In presenting our model, we discuss how new findings in executive control can improve our understanding of how mindfulness increases the capacity for effective emotion regulation.
Intention Check

Did you learn what you hoped to learn today?
Thank you!

Questions?

Send follow-up questions to us at:

institute@landmark.edu
Bonus Material
Emotion Regulation in children with ADHD

• Musser et al, 2012 “Emotion Regulation via the Autonomic Nervous System in Children with Attention-Deficit/Hyperactivity Disorder (ADHD)”

• Looked at parasympathetic nervous system response during emotion regulation. Measured by looking at heart-rate variability (Respiratory Sinus Arrhythmia, RSA)

• Two parts of the autonomic nervous system:
  • Parasympathetic: "rest and digest”
  • Sympathetic: “fight or flight”
Emotion Regulation in children with ADHD

66 children in study (in Oregon), ages 7-9

They avoided confounds (adolescence, long-term medication, substance use) by studying younger kids and having a 24-48 hour “medication washout” period.

Used four 2-minute video clips (2 happy/positive, 2 sad/negative).

Two conditions:
- Induction (make a face expressing emotion in clip)
  NI = Negative Induction PI = Positive Induction
- Suppression (keep face still during clip)
  NS = Negative Suppression PS = Positive Suppression
Emotion Regulation in children with ADHD

[Graph showing RSA change from baseline with different conditions: NI, NS, PI, PS. The graph compares Control RSA Change Score and ADHD RSA Change Score.]
Take home message

-No difference in sympathetic system response (fight or flight).

-Non-ADHD group looked like adult data.

-ADHD group showed “under-arousal” or hyperactivity of the parasympathetic nervous system.

-The ADHD issue: not just difficulty suppressing, rather a difficulty in regulating.

-They had the greatest difference on positive induction!

-The ADHD group found this level of arousal difficult to manage, difficult to internalize.