

 Measuring Up.

Strategies for Reducing Test Anxiety



Research

Reducing Test Anxiety

INTRODUCTION

In today's increased climate of stress surrounding high-stakes assessments, students need the right tools to bolster confidence and to take tests under the best possible circumstances. Our students deserve a robust curriculum and ample opportunity to master the content, skills, and standards on which they will be tested. However, they also need test preparation and test-taking tools.

There is a relatively new and significant body of research about test preparation, test-taking strategies, and building confidence in students that debunks many widely-held beliefs and "tried and true" test-taking tips that students have been using for a long time. For example, recent research on 10 popular strategies shows that highlighting, underlining, and summarizing passages on a test are all relatively ineffective strategies that students and teachers continue to turn to with high frequency (Dunlosky, et al, 2013).

In addition, there is a body of research that reveals which strategies are most effective as students prepare for high-stakes assessments and which ones will help them when they eventually take these assessments. For example, the work of Carol Dweck

and Lisa Blackwell (2007) has shown that praising students' efforts instead of their talents helps students perform better in school and on assessments by creating a *growth mindset* instead of a *fixed mindset*. The research of Amy Cuddy, Dana Carney, and Andy Yap has shown that just a few minutes of power poses and posture exercises can increase performance in a variety of high-stress circumstances (2010). And, there are numerous other strategies that students and teachers can employ in advance of assessments and during assessments.

In this white paper, we will outline a variety of strategies for test-preparation and for test-taking; some are best used over a long range, others over a short range (immediately prior to a test), and others during the test (some specific to mathematics or English language arts tests). We encourage teachers to read the articles, clinical research, and meta-analyses behind these recommendations. For further detail about each strategy, see the links provided in the *References* section.

In the table below, the strategies are organized by when they are most effectively implemented. We strongly recommend that teachers select one or two strategies at a time and introduce

	Prior to the Test		During Test Strategies
	Long Range Strategies	Short Range Strategies	
Growth Mindset	✓		
Practice testing and distributive practice	✓		
Rereading	✓		
Sleep and general nutrition	✓		
Exercise	✓	✓	
Writing about anxieties		✓	
Pre-test stress relievers		✓	
Self-affirmation statements		✓	
Power pose and posture exercises		✓	
Maintain focus			✓
Peppermints			✓
Review instructions/directions			✓
Paper-and-pencil tests—mark it up!			✓
Extra time			✓
ELA Strategies			✓
Math Strategies			✓

them to their students with transparency so that students can implement them independently as well.

Prior to the Test: Strategies to Implement Prior to Taking Assessments

The first section of “prior to the test” strategies requires broad changes that will impact the way you speak to your students, help guide them throughout the year, and plan your weekly lessons. The second “prior to the test” section is a compilation of strategies that are intended to be implemented in short bursts immediately prior to the assessment. Consider choosing one from each category to start.

LONG RANGE STRATEGIES FOR PRIOR TO THE TEST

The following strategies are meant to be implemented over a long range of time. There is never a bad time to begin any of them, but hopefully you will choose some of them at the beginning of the school year with plenty of time to get used to them and to share them transparently with your students so that they too can take ownership of them.

Teachers (and families) can help students develop a *growth mindset* instead of a *fixed mindset* at any point in the year but of course earlier is preferable than later. Students with a *growth mindset* see success as something that is achieved through effort and hard work, and if praised for these qualities, are more likely to do well than students with a *fixed mindset* who perceive success as innate and as a result of raw intelligence and talent (Dweck, 2010). This is not to say that “everyone has the same potential in every domain, or will learn everything with equal ease” (Dweck, 2007). However, students with a *growth mindset* see intelligence as malleable and are more likely to “hold positive beliefs about effort” and “choose effort-based strategies in response to failure” (Dweck, 2007). In contrast, Dweck and her colleagues’ research found that students of “equal intellectual ability” but who were on the other end of the mindset continuum and maintain a *fixed mindset* responded to academic challenges often by “giving up or withdrawing effort if the verdict is negative” (Dweck, 2007). Regardless of when we shift our own thinking and way of talking to our students, if we want to build a *growth mindset* we need to instill in our students that achievement is about hard work and that all students can make incremental progress.

TO ENCOURAGE A GROWTH MINDSET:

- Praise the effort or “process”—“I like the way you tried all kinds of strategies on that math problem until you finally got it” (Dweck, 2007).
- Praise the strategy—“You found a really good way to do it” (Jain, 2014).
- Praise with specificity—“You seem to really understand fractions” (Jain, 2014).
- Praise success—“Wow, that’s a really good score. You must have worked really hard (Dweck, 2007).

Another broad strategy that many researchers have shown to be effective for improving testing performance is *distributed practice* and practice testing which should occur throughout the school year, and not just immediately prior to the actual test (Gulek, 2003; Dunlosky, 2013). According to Dunlosky, Rawson, Marsh, Nathan, and Willingham, there is more than 100 years of research that vouches for the promise of *distributed practice* and practice testing to improve both learning and retention. In an extensive meta-analysis of the research on test preparation, Becker (1990) concluded that on average, helping students understand how to approach test questions can help increase test scores. In a landmark meta-analysis of the National Education Longitudinal Study (NELS) database, Briggs (2001) concluded that, after rigorous coursework, the next most significant impact on test scores is the use of quality test-preparation materials that familiarize students with the test and the knowledge base

MEASURING UP PROVIDES DISTRIBUTED PRACTICE AND PRACTICE TESTING THROUGH:

- standards-aligned lessons that break down each standard and provide real-world application;
- guided practice that supports depth of understanding;
- independent practice with rigorous items and texts to prepare students for standards mastery;
- practice tests with items similar to those on the SBAC, PARCC or state-specific tests, including multiple choice, open response, and tech-enhanced items.

they need to answer the questions. Briggs also noted that students who had taken a high-stakes test previously were most likely to improve their scores after interaction with test prep materials. Sloane and Kelly (2003) write that, “Students can be effective instruments in their own learning if the teacher is clear on the learning goals and the students are informed of their current performance and given clear steps for remediation . . . The task for teachers is to know and understand their state’s standards, and then translate this knowledge to continuously help students learn and self-assess to meet those standards.” It is critical that students’ ownership of their progress is an integral part of *distributive practice* and the test preparation process. Furthermore, practice does not always have to take the form of the actual test in order to be effective. For example, practice can involve students independently testing their recall of information using “actual or virtual flashcards;” it is the act of practicing and practice testing that supports developing “elaborate retrieval processes” and “better retention” of the material (Dunlosky, 2013). An important take-away from this body of research is that students must practice demonstrating what they have learned in a variety of ways, both through teacher-led practice and student-initiated practice.

Although rereading is not a recommended strategy while taking a test, rereading has been found to be effective for *distributive practice* with spaced intervals, especially if subsequent readings are completed with purpose and focus (Dunlosky, 2013). In their study of effective learning techniques, Dunlosky, Rawson, Marsh, Nathan, and Willingham found that *massed* rereading, which occurs immediately after the first reading, is somewhat effective for improving recall of main ideas and sometimes details, but is much less effective than spaced rereading, which should occur preferably within a 4-day lag. *Spaced* rereading that occurs after 3.5 weeks was found to be relatively ineffective. *Spaced* rereading is particularly helpful when the reader has little to no background knowledge in the subject (Dunlosky, 2013). Overall, this technique was not rated as highly effective for use immediately prior to a test or during a test for the following reasons: this would require *massed* rereading, is not a good use of limited time, and research has proven that other techniques are far more effective.

Finally, the last broad strategy for improving test performance, that we will discuss here, is improving students’ understanding of how sleep and good nutrition are critical for optimal learning and test performance. Adequate sleep (Willis, 2006) and avoiding

screen time in order to promote sleep and better study habits (Barlett, 2011; Figueiro, 2015) have all been found to increase performance on assessments and problem-solving tasks. Judy Willis (2006), a neurologist and classroom teacher, writes in *Research-Based Strategies to Ignite Student Learning* that sleep is essential for storage of information in the memory and for synaptic connections that wire memories for long-term storage.

During sleep, the cortical executive functioning of the frontal lobes is less active because less sensory input is entering the nervous system. This reduced-activity brain state is just what is needed to allow recently learned material to be rehearsed or repeated, sometimes in dreams. Because sleep is the time when the brain is least distracted by the sensory input bombarding it all day, it can devote a greater portion of its energy (metabolism) to organizing and filing the memories formed during the day . . . Memory storage in the brain is most efficient during the longest periods of uninterrupted deep sleep rather than during the “dream sleep” associated with rapid eye movement (REM sleep). This period of deep sleep is the critical time when the brain transforms recent memories into long-term memories by building and extending the dendritic branches. The hard-wiring of information learned during the day results in stored permanent memories (Willis, 2006).

FOR MORE INFORMATION ABOUT THE IMPORTANCE OF SLEEP AND ACADEMIC PERFORMANCE:

- <http://www.webmd.com/sleep-disorders/features/fixing-sleep-problems-may-improve-childs-grades-and-behavior>

FOR MORE INFORMATION ABOUT THE EFFECT OF SLEEP ON LEARNING AND MEMORY:

- <http://healthysleep.med.harvard.edu/healthy/matters/benefits-of-sleep/learning-memory>

Willis (2006) argues that some of the most beneficial sleep occurs between the 6th and 8th hours of sleep when serotonin is released and which benefits memory and alertness during the day. If sleep is disrupted, particularly as a result of excessive screen time and screen time exposure within two hours of bedtime, then it follows that memory storage is disrupted and executive functions can

become impaired during the day (N. Barlett, Gentile, C. Barlett, Eisenmann & Walsh, 2011). Researchers N. Barlett, Gentile, C. Barlett, Eisenmann and Walsh (2011) examined the effects of how excessive screen time displaces sleep in children and thus affects attention, aggression, and BMI. They estimate that “an average child who plays 1 hour of video games a day could sacrifice over an hour of sleep each week” (N. Barlett, Gentile, C. Barlett, Eisenmann & Walsh, 2011). Their research found that the cumulative loss of sleep has long-lasting consequences for health, behavior, and achievement in school (N. Barlett, Gentile, C. Barlett, Eisenmann & Walsh, 2011). Furthermore, the research of Mariana Figueiro and Martin Overington (2015) found that screen use in adolescents within 2 hours of their bed time suppresses melatonin production and thus disrupts circadian rhythms which bring about sleep. In their research they noted that adolescents, and in particular young adolescents, are sensitive to melatonin disruption caused by the cool-white fluorescent light emitted from a variety of *self-luminous devices* (computers, televisions, e-readers, cell phones, tablets, etc) (Figueiro, 2015). The implications of their research appear to be even greater for pre-adolescent children.

Proper nutrition, including an adequate but not excessive consumption of calories, particularly in the form of protein, fruits and vegetables, and unsaturated fats (CDC, 2014; Gómez-Pinilla, 2008), are essential for brain development, attention during learning experiences, and retention of learned information. In Gomez-Pinilla’s (2008) research on brain foods and their impact on cognition and mental health, he asserts that there is substantial scientific research that supports the need for a diet rich in omega-3 fatty acids (nuts, oily fish such as salmon and tuna, avocados and eggs) and low in trans and saturated fats (red meat, high-fat dairy products like butter, and partially hydrogenated oils found in processed foods). The former he asserts are critical for synaptic function and plasticity, and a deficiency in omega-3 fatty acids has been linked to several mental disorders (ADD, dyslexia, dementia, depression, bipolar disorder, and schizophrenia) (Gomez-Pinilla, 2008). Furthermore, excessive calorie intake and a diet high in trans and saturated fats adversely affects cognition and neurons “independent of insulin resistance or obesity” (Gomez-Pinilla, 2008). The Center for Disease Control and Prevention (2014) also asserts that there is sufficient research to advise students to eat a healthy breakfast every day and to consume a balanced diet rich in essential vitamins (i.e., vitamins A, B6, B12, C, folate, iron, zinc, and calcium) (CDC, 2014). As educators we must guide our students to make healthy nutritional choices and to understand

in which foods they can find the necessary nutrients that will help them to stay healthy and to achieve their highest academic potential.

SHORT RANGE STRATEGIES FOR PRIOR TO THE TEST

While regular exercise has been linked to better performance in school in general (CDC, 2014; Kohl & Cook, 2013), a short burst of exercise for 12 minutes immediately prior to an assessment has also been shown to improve academic performance for a period of 45 minutes (Tine, 2013). In Michele Tine’s (2013) study of low-income and high-income students she found that physical activity was particularly effective for improving the *selective visual attention* (SVA) of low-income students enough so that it eradicated any “pre-existing income gap.” Improving SVA through regular physical activity is particularly important because if students cannot ignore distractions while gathering information, then they cannot adequately “process the information and eventually retain it” (Krushke, 2005 cited by Tine, 2013). Tine also found that the short burst of exercise improved reading comprehension in low-income students although it didn’t entirely eliminate the deficit over their high-income peers. Finally, Tine found that the short burst of exercise did not significantly alter either the SVA or reading comprehension of the high-income students and hypothesized that this may have been either the result of low-income students having greater room for improvement or that low-income students experience greater amounts of stress (more elevated levels of cortisol) and thus benefit from exercise to alleviate it (Tine, 2013). The implications of this last finding may hold potential for all students who experience high levels of test anxiety and who need to alleviate stress immediately prior to taking a test.

FOR IDEAS ABOUT HOW TO INCORPORATE EXERCISE IN SCHOOL:

- http://www.heart.org/idc/groups/heart-public/@wcm/@fc/documents/downloadable/ucm_455767.pdf

FOR INFORMATION ABOUT EXERCISE AND ADHD:

- <http://www.medicaldaily.com/kids-adhd-find-benefits-morning-exercise-school-calming-symptoms-302286>

Another recent study found that writing about test-taking anxieties immediately prior to taking a test can also have significant positive effects on test performance. In this study, researchers Gerardo Ramirez and Sian Beilock (2011) administered a 10-minute pre-test writing activity to express anxieties about the test and about past experiences with test-taking. They found that students who were highly anxious were able to alleviate anxiety, free up working memory, and improve their test performance (Ramirez & Beilock, 2011). Ramirez and Beilock also noted in their findings that unrelated writing tasks were not effective and that students who were not highly anxious experienced neither an improvement nor a negative impact from the writing activity.

TRY HAVING STUDENTS RESPOND TO ONE OF THESE PROMPTS BEFORE A TEST:

- Describe your thoughts and feelings about the math problems you are about to solve.
- Describe your thoughts and feelings about the essay you are about to write.
- How do you feel about the upcoming test? Describe any concerns you have.
- When I take a test, I feel ____.

There are a number of other pre-test stress relievers that have been proven effective if employed immediately prior to a high-stress task, including: breathing techniques, progressive muscle relaxation, and positive visualization that elicit a relaxation response (U.C. Davis). Researchers studying these relaxation activities describe the effects of the *relaxation response (RR)* as a decrease in: cortisol, oxygen consumption, respiratory rate, and blood pressure, which results in an increased sense of well-being (Dusek & Benson, 2009). In a study conducted by Jeffrey Dusek and Herbert Benson, M.D. (2009) the *stress response (SR)* and its physiological impact were mitigated by “mind-body therapies” that have the potential to improve not only performance tasks in the moment but also to improve the long-term health and immune system of the individual (Dusek & Benson, 2009).

Another quick strategy for improving test performance immediately prior to the test involves employing positive thinking through self-affirmation statements. Self-affirmation theory suggests that an individual is generally motivated to preserve a sense of integrity and self-worth, and when this sense of self is threatened, psychological stressors affect the individual’s perception of reality and the ability to learn from the

THE FOLLOWING ARE A FEW EXAMPLES OF AFFIRMATION STATEMENTS TO TRY OUT WITH STUDENTS:

- “[Value] is important to me. It is important to others because _____. [Value] has influenced my life by _____. [Value] is an important part of who I am because_____” (Cresswell et al, 2013).
- “I am good at_____.”
- “I am able to _____.”
- “In tough situations, I can_____.”

experience (Legault, Alkhindi, & Inzlicht, 2012). In two recent studies, individuals were given the opportunity to make self-affirmation statements (identifying an important value or personal characteristic and what it means to them) before attending to problem-solving tasks (Cresswell, Dutcher, Klein, Harris & Levine, 2013; Legault, Alkhindi, & Inzlicht, 2012). In both studies, those individuals who made self-affirmation statements were able to improve their performance on high-stress problem-solving tasks, to improve their ability to make improvements or corrections going forward, and to improve their ability to maintain a positive sense of self (Cresswell, Dutcher, Klein, Harris & Levine, 2013; Legault, Alkhindi, & Inzlicht, 2012).

Finally, the quickest strategy (2 minutes) that has received the most press, and that all students can use to improve their confidence is the power pose. Amy Cuddy, Dana Carney, and Andy Yap (2010) found that engaging individuals in two brief power poses (2 minutes) affects the individual’s “increased feelings of power and tolerance for risk.” In Amy Cuddy’s Ted Talk, *Your Body Language Shapes Who You Are*, she demonstrates how two poses (expansive with open limbs—see reference section for links to Ted Talk and the research paper with photographs)—can affect testosterone levels (elevating) and cortisol levels (lowering)



(Carney et al, 2010)

(Cuddy, 2012). Although Cuddy's work has not been put to the test in an academic testing situation, the implications for improving self-confidence before a test are worthy of trying and with little to lose since there is not a significant time investment.

During the Test: Strategies to Implement During Assessments

The first section below includes "during the test" strategies that can be used regardless of the subject matter. The second section of "during the test" strategies is a compilation of strategies that are particularly useful during an English language arts (ELA) assessment or during other assessments that require reading texts and answering extended written responses (such as science or social studies). The third section of "during the test" strategies is a compilation of strategies that are useful for mathematics assessments, or other assessments that require mathematical calculations (such as science). Consider choosing at least one or two strategies from each category to start.

ALL SUBJECTS

Maintaining focus and attention is essential during a test of any kind. Students should be encouraged to:

- be free of physical distractions—wear comfortable clothing, alleviate hunger and drink plenty of water before the test, take advantage of all bathroom breaks during the test, keep tissues handy, etc.;
- ignore all other test takers, especially ignoring on which part of the test they are working—test booklets are often arranged differently so that students are working on different parts of the test at the same time;
- ask for audible or visible distractions to be removed from the test-taking area, if possible; or move to a part of the room where the distraction is not visible (i.e. a clock);

Research has shown that even the smell of peppermint can increase alertness and attention during a clerical task (Barker, et al, 2003). Other research on peppermint has shown that it does not necessarily enhance memory or recall of vocabulary so its

positive effects are limited but certainly not detrimental. Students might try eating peppermints or chewing peppermint gum either immediately before taking a test or during the test as a stimulant.

Reviewing directions for the entire test or for a specific section of the test is a sound test-taking practice. We strongly recommend review, particularly when the directions are new or unfamiliar. Students should be encouraged to read the directions twice if necessary and to focus on key words that indicate the purpose of the section or of the question. If necessary students can circle or underline key words in the directions—for example, words that direct students to look for a *main idea* or *similarities* or *differences*.

If a test is given to students in a paper-and-pencil format, urge them to mark it up! There are many ways that students can effectively and ineffectively mark up a test, so guiding them in this practice is essential. Recent research has shown summarizing, highlighting, and rereading to be largely ineffective during a test (Dunlosky, et al, 2013). Urge students not to bother to mark up reading passages; main ideas are usually easy to locate in the introduction or conclusion. Vocabulary is usually underlined or *italicized* if there is a question pertaining to it; often a line number will be referenced so that the vocabulary word can be found quickly.

However, there are other ways in which marking up a paper-and-pencil test is very effective. And, if students are taking a digital test, often they can make helpful notes on scrap paper.

- o **The Brain Dump**—Students can write down formulas, key words, or definitions they will need for the test. This helps to alleviate demand on the working memory so that students can focus on the problems at hand and following directions.
- o **Circle or underline key words**—As we mentioned above, key words in the directions or question prompt are essential to choosing the correct answer. Guide students to circle or underline only one or two words so that they stand out and help to remind them of the purpose of this particular task. For digital tests, students can write down the key word on scrap paper.
- o **Elimination**—Students don't have to come up with the right answer every time in order to know which choices

are wrong! Elimination is often as effective as figuring out the answer independently. Practice with your students how to eliminate incorrect choices when they can't figure out the answer quickly; on paper-and-pencil tests students can actually cross out incorrect choices. Students should read ALL answer choices first before choosing a response!

Elimination is often as effective as figuring out the answer independently. Practice how to eliminate incorrect choices.

- o **Come back to a question later**—When students don't know which is the correct choice and cannot eliminate enough incorrect answers, they should be urged to come back to the question later. Sometimes taking a break from a question can be very helpful. However, before moving on, students should write down calculations or a note about what they do know, so they don't have to start from scratch when they return to the question. Box or circle the number of the question for paper-and-pencil tests, so that it is easy to locate. For digital tests, students can write down the number of the question they want to return to.
- o **Extra time**—Rather than finishing early and putting down their pencils or logging off, students should be urged to return to incomplete questions in the section in which they are working and to review answers to make sure they are correct. Only change an answer if you are sure it is incorrect!
- o **Don't make wild guesses**—Most of the time it's better to leave the question blank than to guess when students can't eliminate any incorrect answers or if they can only eliminate one or two incorrect answers (the odds are not in their favor).

the way they would if they were reading for pleasure or for homework.

- o Circle or underline key words—focus on key words in the prompt that indicate main idea, sequence, purpose/bias, as necessary.
- o Identify critical vocabulary words in the passage—often essential vocabulary words appear as underlined, **bold**, UPPER CASE, *italicized*, or are indicated by line numbers in the item prompt (FLDOE, n.d.).
- o Study carefully any pictures, charts, graphs, tables and captions presented, especially when these components of the reading are the focus of a question.
- o Make sure answers are based on the information in the passage and in the supporting pictures, charts, graphs, tables and captions.
- o Determine the essay response type (narrative, expository, persuasive) (FLDOE, n.d.).
- o Make an outline for an extended response—practice with students how to create a quick bullet-list for the structure of their response and the sequence of main ideas, including how they might conclude; plan to include details; read through the full essay and make necessary edits.
- o What not to do during the test! Summarizing, highlighting, rereading passages—these have all been found to be ineffective (Dunlosky, et al, 2013).

Pre-read questions before reading the passage—this helps students to focus on what is essential.

ELA STRATEGIES

The following strategies are specific to most ELA tests or to tests that require reading passages and responding to both multiple-choice items as well as to short- and extended-response items.

- o Pre-read questions before reading the passage—this helps students to focus on what is essential. A reality of test-taking is that students cannot linger over the texts and enjoy them

MATH STRATEGIES

The following strategies are specific to most math tests or tests that require making mathematical calculations (including some science tests).

- o Write down formulas or facts so you don't have to worry about forgetting them; this frees up your working memory.

- o Use scrap paper or the white space in the test book to do your calculations (FLDOE, n.d.).
- o Pay special attention to emphasized text (**bold**, *italics*, UPPERCASE, underlined) (FLDOE, n.d.).
- o Study any pictures, charts, graphs, tables and captions presented, especially when these are the focus of a question;.
- o Identify outliers in the multiple choice options. For example, if the answer should include digits in the ones, tens and hundreds, eliminate those answers that don't have the right number of place holders.
- o Check answers carefully; try working backwards from the answer choices; decide if your answer seems reasonable before selecting the one you think is correct (FLDOE, n.d.).
- o Use a calculator properly if applicable to grade level and allowances of the test (FLDOE, n.d.).

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CONCLUSION

Armed with the right set of tools, students can gain confidence in the face of challenging assessments.

Long range and short range “prior to the test” strategies can become part of a healthy academic routine and a way of approaching everyday life—including having a positive *growth mindset*; being healthy, rested and physically active; and being well-rehearsed in demonstrating knowledge and skills. The more students practice the “during the test” strategies that they have identified as useful, the more these strategies will feel like a normal part of the assessment experience. Students should be encouraged to take ownership of test-taking strategies and use them in their classes on a regular basis, so that they will carry them along as if they were a toolbox from which they can choose as necessary and from which they can rely on in times of need.

SOURCES CITED

Barker, S., Grayhem, P., Koon, J., Perkins, J., Whalen, A. & Raudenbush, B. (2003). Improved performance on clerical tasks associated with administration of peppermint odor. *Perceptual & Motor Skills*, 97(3 Pt 1), 1007-10.

Barlett, N.D., Gentile, D. A., Barlett, C. P., Eisenmann, J. C. & Walsh, D. A. (2011): Sleep as a Mediator of Screen Time Effects on US Children's Health Outcomes. *Journal of Children and Media*, Retrieved from: http://www.drpdouglas.org/drpdpdfs/BGBEW_JoCaM_2011.pdf.

Becker, B. J. (1990). Coaching for the Scholastic Aptitude Test: further synthesis and appraisal. *Review of Educational Research*, 60 (3), 373–417.

Blackwell, L., Trzesniewski, K., & Dweck, C. (2007). Implicit Theories of Intelligence Predict Achievement Across an Adolescent Transition: A Longitudinal Study and an Intervention. *Child Development*, 78 (1), 246-263. Retrieved from: <https://web.stanford.edu/dept/psychology/cgi-bin/drupal/system/files/Implicit%20Theories%20of%20Intelligence%20Predict%20Achievement%20Across%20an%20Adolescent%20Transition.pdf>.

Breus, M.J. (2004, September). Back to School, Back to Sleep: Fixing your children's sleep problems may improve their grades and their behavior. *WebMD*. Retrieved from: <http://www.webmd.com/sleep-disorders/features/fixing-sleep-problems-may-improve-childrens-grades-and-behavior>.

Briggs, Derek C. (2001). The Effect of Admissions Test Preparation: Evidence from NELS-88. *Chance*, 14(1), 10-18.

Carney, D.R., Cuddy, A., Yap, A.J. (2010). Power posing: brief nonverbal displays affect neuroendocrine levels and risk tolerance. *Association for Psychological Science*. Retrieved from <http://www.people.hbs.edu/acuddy/in%20press,%20carney,%20cuddy,%20&%20yap,%20psych%20science.pdf>.

Carroll, C. (2014, October). Better Academic Performance—Is Nutrition the Missing Link? *Today's Dietician*, 16(10), 64. Retrieved from: <http://www.todaysdietitian.com/newarchives/100614p64.shtml>.

Center for Disease Control and Prevention. (2014). Health and Academic Achievement. *National Center for Chronic Disease Prevention and Health Promotion*. Retrieved from: http://www.cdc.gov/healthyouth/health_and_academics/pdf/health-academic-achievement.pdf.

Creswell, J.D., Dutcher, J.M., Klein, W.M.P., Harris, P.R., Levine, J.M. (2013). Self-Affirmation Improves Problem-Solving under Stress. *PLoS ONE*, 8(5). Retrieved from: <http://www.psy.cmu.edu/~creswell/papers/Creswell%20et%20al%20%282013%29,%20self-affirmation,%20stress,%20and%20problem-solving,%20PLoS%20One.pdf>.

Cuddy, A. (2012). Your body language shapes who you are. TEDGlobal. Retrieved from http://www.ted.com/talks/amy_cuddy_your_body_language_shapes_who_you_are?language=en#t-817849.

Dunlosky, J., Rawson, K.A., Marsh, E.J., Nathan, M.J., & Willingham, D.T. (2013). Improving students' learning with effective learning techniques: promising directions from cognitive and educational psychology. *Psychological Science in the Public Interest*, 14(1), 4–58. Retrieved from: <http://psi.sagepub.com/cgi/reprint/14/1/4?ijkey=Z10jaVH/60XQM&keytype=ref&siteid=sppi>.

Dusek, J.A., & Benson, H. (2009). Mind-Body Medicine: A Model of the Comparative Clinical Impact of the Acute Stress and Relaxation Responses. *Minnesota Medicine*, 92(5), 47-50.

Dweck, C.S. (2007, October). The Perils and Promises of Praise. *ASCD*, 65(2), 34-39. Retrieved from: <http://www.ascd.org/publications/educational-leadership/oct07/vol65/num02/The-Perils-and-Promises-of-Praise.aspx>.

Dweck, C.S., Trzesniewski, K.H., & Blackwell, L.S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: a longitudinal study and an intervention. *Child Development*, 78 (1), 246–263.

Dweck, C.S. (2010). What is mindset. *Mindset Online*. Retrieved from: <http://mindsetonline.com/whatisit/about/index.html>.

Figueiro, M. & Overington, D. (2015). Self-luminous devices and melatonin suppression in adolescents. *Lighting Research Technology*, 0, 1-10. Retrieved from: <http://lrt.sagepub.com/content/early/2015/05/06/1477153515584979.full.pdf+html>.

Florida Department of Education. (N.D.) Test-Taking Strategies Checklist. Retrieved from: http://palmbeachschools.org/assessment/documents/Test-Taking_Strategies_updated_2-14-11.pdf.

Gómez-Pinilla, F. (2008). Brain foods: the effects of nutrients on brain function. *Nature Reviews. Neuroscience*, 9(7), 568–578. doi:10.1038/nrn2421. Retrieved from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2805706/pdf/nihms162299.pdf>.

Gulek, C. (2003). Preparing for high-stakes testing. *Theory into Practice*, 42(1), 42–50.

In School Activity Breaks. (n.d.). *American Heart Association*. Retrieved from: http://www.heart.org/idc/groups/heart-public/@wcm/@fc/documents/downloadable/ucm_455767.pdf.

Jain, R. (2014, July 6). Stop saying, 'You're so smart!' 3 better ways to praise kids. *Huffington Post*. Retrieved from: http://www.huffingtonpost.com/renee-jain/praising-kids_b_5272483.html.

Jensen, E. (2012, April). What Research Can Help Your Students Score Higher on Upcoming Big Tests? *Brain Based Learning*. Retrieved from <http://www.jensenlearning.com/news/help-students-score-higher/brain-based-learning>.

Kohl, H.W. III & Cook, H.D. (Eds.) (2013). *Educating the student body: taking physical activity and physical education to school* (pp.161-196). Washington D.C.: National Academies Press. Retrieved from: http://www.nap.edu/download.php?record_id=18314#.

Kruschke, J.K. (2005). Learning involves attention. In G. Houghton (Ed.), *Connectionist Models in Cognitive Psychology* (pp.113–138). New York, NY: Taylor and Francis.

Legault, L., Al-Khindi, T., & Inzlicht, M. (2012). Preserving Integrity in the Face of Performance Threat, Self-Affirmation Enhances Neurophysiological Responsiveness to Errors. *Psychological Science*, 23(12), 1455-1460. Retrieved from: <https://static1.squarespace.com/static/550b09eae4b0147d03eda40d/t/55272a09e4b068dde7073660/1428630025676/preserving-integrity-in-the-face-of-performance-threat.pdf>.

Ramirez, G. & Beilock, S.L. (2011). Writing about testing worries boosts exam performance in the classroom. *Science*, 331(6014), 211-13. Retrieved from: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=0CC8QFjACahUKewjhivu74-3HAhWB8oAKHSTWBSk&url=http%3A%2F%2Fspatiallearning.org%2Fpublications_pdfs%2FTest_Anxiety_Science_2011.pdf&usg=AFQjCNHC2HC-gsBDAZdP4LYhaZhCKIjGHQ&sig2=KGv5IEJGFxfLkcuuwVEbYQ.

Relaxation Techniques. (n.d.) *University of California Davis*. Retrieved from: http://www.ucdmc.ucdavis.edu/hr/hrdepts/asap/Documents/Relaxation_Techniques.pdf.

Sleep, Learning, and Memory. (2007). *Healthy Sleep*. Retrieved from: <http://healthysleep.med.harvard.edu/healthy/matters/benefits-of-sleep/learning-memory>.

Sloane, F. C., & Kelly, A. E. (2003, January). Issues in high-stakes testing programs. *Theory into Practice*, 42(1), 12–17. Retrieved from: http://ualr.edu/lcpearson/research/research/Files/high_stakes.htm.

Test Anxiety. (n.d.). *Anxiety and Depression Association of America*. Retrieved from <http://www.adaa.org/living-with-anxiety/children/test-anxiety>.

Test Taking Strategies Checklist. (2007). *Palm Beach Schools*. Retrieved from http://www.palmbeachschools.org/assessment/documents/FCAT_Test-Taking_Strategies_Checklist.pdf.

Top 25 Test-Taking Tips, Suggestions & Strategies. (n.d.). *Albuquerque Public Schools*. Retrieved from <http://www.aps.edu/aps/7-bar/TestTakingTop25.pdf>.

Weller, C. (2014, September). Kids With ADHD Find Benefits In Morning Exercise Before School, Calming Symptoms. *Medical Daily: Healthy Living*. Retrieved from: <http://www.medicaldaily.com/kids-adhd-find-benefits-morning-exercise-school-calming-symptoms-302286>.

Willis, J. (2006). Research-Based Strategies to Ignite Student Learning. ASCD. Retrieved from: http://www.ascd.org/publications/books/107006/chapters/Memory,_Learning,_and_Test-Taking_Success.aspx.