**Putting research into practice**

This student activity introduces students to the cycle of anxiety, reduced working memory (the capacity to keep things in mind in the very short term), and poor academic performance.

The activity suggests there is a way to break the cycle - by reducing anxiety right before a task that requires good working memory. The method of anxiety reduction is *reflective (or expressive) writing*, or writing about one's reflections or thoughts.

The activity asks students to respond to the following prompt, slightly modified from Park et al. 2014:

*Please take the next seven minutes to write as openly as possible about your thoughts and feelings regarding the math problems (or test, or job interview, or date) you are about to perform. In your writing, I want you to really let yourself go and explore your emotions and thoughts as you are getting ready to start your math problems. You might relate your current thoughts to the way you have felt during other similar situations at school or in other situations in your life. Please try to be as open as possible as you write about your thoughts at this time. Remember, no one will see or read what you write, it is just for you.*

As an instructor (or peer mentor), you can lead students through the activity handout, or start a conversation after they've read the handout, or lead a discussion with the associated Powerpoint presentation, about how students can use reflective writing to help with anxiety.

* Some example use scenarios are:
  + before an upcoming test in the course.
  + before difficult quantitative assignments (in statistics or math courses, or quantitative lab assignments or problem sets in biology).
  + a private written or online journal where students document their math anxiety at regular intervals, with some self-reflection about whether they notice any changes over time in their writing. Students might be guided to look for differences in word choice, the intensity of the feelings expressed, etc.
* After introducing the topic with either the handout or powerpoint, you might ask if anyone has had the experience that worrying about something "takes up" some of their brain power.
  + Given the potential sensitivity, starting with a non-academic example might be good... like a sports game, band performance, or meeting a stranger or celebrity.
  + Given your position as an authority that is "supposed to know everything", offering your own example might start a discussion rolling.
  + If students identify with the cycle (i.e. our description of the problem), they may be more willing to commit to the activity (i.e. our intended solution).

**Important DO's and DONT's:**

-**DO** emphasize that the writing has to be about actual feelings - it is not the act of writing, but the act of writing about honest worries that matters.

-**DO** emphasize that students should try this more than once, and that there is no substitute for being prepared and knowing the material at hand. Reducing anxiety frees you up to do your best, but your best is determined by your academic preparation.

-**DONT** force students that don't identify with math or test anxiety to pretend to be worried. Some people are relatively insensitive to academic anxiety. You can assure these students that this activity will not hurt their performance, and that they may be able to use it elsewhere in life.

-If time or situations allow, there are short, easy to take anxiety assessments that

students can use to determine their own level of math anxiety (see this version of the Abbreviated Math Anxiety Scale or AMAS). This would be a great   
pre-discussion activity, to give students a sense of their own math anxiety right before presenting a potential solution.

-**DON'T** force this activity into an already time-pressured test-taking situation. Students might rightfully feel that the writing took time away from actually taking the test.

If you feel the class time is too valuable (e.g., "I need all 50 minutes for the

exam."), a potential compromise is to invite students to show up 10 minutes

early.

**References**

Ramirez G, Beilock [SL. 2011.](http://science.sciencemag.org/content/331/6014/211#corresp-1) Writing about testing worries boosts exam performance in the classroom. Science 331:211-213.

Park D, Ramirez G, Beilock SL. 2014. The role of expressive writing in math anxiety. Journal of Experimental Psychology 20:103–111.