## **Learning Support: Responsive Teaching**

## ***A weekly blog that will be emailed, with hard copies available in the HS faculty room; format generally the same***

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## **December 7, 2018 Theme: Learning How to Learn**

### **Brain-based corner**

[Barbara Oakley](https://barbaraoakley.com/), distinguished engineer, author, and professor, who flunked her way through math in school, now teaches one of the world’s largest online courses: *Learning How to Learn (also a book)*, based on neuroscience.

**Big themes**

Free handout downloads located [here](https://barbaraoakley.com/books/learning-how-to-learn/), in English and Chinese, could be useful for students.

**Three ways to experience Barbara Oakley’s contributions.**

Video: 17 minutes

<https://www.youtube.com/watch?v=O96fE1E-rf8>

Interview

<https://www.magneticmemorymethod.com/learning-how-to-learn/>

Article

<https://www.kqed.org/mindshift/49697/5-strategies-to-demystify-the-learning-process-for-struggling-students>

## **Seen and heard: Cool stuff**

The other day I was in Chemistry 2, learning about gases, moles, and obscure (to me) equations. My brain was having a hard time! I found myself wondering: what’s the real-life application of this stuff? About two minutes later, Pete shifted to some slides about the levels of our atmosphere, carbon dioxide, the ozone layer, and actions we can take to combat climate change. At that moment, I felt a sense of relief and like the ground was solidifying. Chemistry has a purpose! I’m sharing this because…well, see see the metaphor section in the Strategies box.

### **Strategies and structures**

**Practice**

Many times, when students don’t do well on tests, when you investigate how they studied, it turns out it’s more passive than active. Teach students how to study—practice repeatedly to veer away from the “I looked over my notes” approach, which is completely passive and ineffective.

**Chains and chunking**

To acquire the facts needed for success in a particular discipline, nothing beats repetition for memorization. Facts have to stay in working memory long enough to retrieve for more practice. We don’t have much “space” in working memory at any given time, so chunking information means a chain of info can take up one of those slots. *Example:* Need to memorize a phone number? (who does that anymore?!). 10 random digits is actually a lot. The three chunks of the phone number make it easier to remember.

**Metaphor, analogy, stories, and purpose**

Our brains ADORE, LOVE, ABSORB stories. These help our brains connect to the new information, find an emotional resonance, and discover patterns. The neural pathways created help jump-start student learning and connect new info to old info.

Think of how you can teach something new with chunking or find a metaphor or analogy for your next content/skill area or introduce a unit with the ultimate meaningful purpose of the unit.

**Focus…and don’t.**

After a period of intense focus—taking in new information--your brain NEEDS a diffuse mode—time for rest and consolidation. 25 minutes + 5 minutes (roughly speaking). Model and teach this technique for moving between focused mode and diffuse mode; it’s called the [Pomodoro technique](https://learningenglish.voanews.com/a/education-focus-withpomodoro-technique/3872654.html).

Use it to structure class: break up class into these types of time periods. Teach it directly to students as a method of focusing and getting work done.