

BRAIN



BRAIN RESEARCH AND INSTRUCTION

JANET N. ZADINA, PH.D.

Spring, 2009

HIGHLIGHTS IN THIS ISSUE:

LATEST RESEARCH FROM SOCIETY FOR NEUROSCIENCE CONFERENCE

WORKBOOK NOW AVAILABLE

HOT OFF THE PRESS!!

Notes from the Society For Neuroscience Conference

Paying Attention

- A study by Kelley (University College London) & Yantis (Johns Hopkins University) found that practice improved attention. As you may recall from my talk on Attention and the Brain, attention is the ability to screen out distracters. This ability was improved and fMRI showed that practice changed activity in different regions of the brain.
- Zanto, Hennigan & Gazzaley from the University of California, San Francisco, showed that top-down modulation of attention (deliberately focusing on relevant stimuli and ignoring irrelevant distractions) affected working memory. As I have mentioned, many tasks in school that are called reading or math tasks are actually working memory tasks. Many students have problems with working memory. Training students to improve attention may also help improve their working memory.

The Importance of Sleep

- Yet another study confirms the importance of sleep on learning. French researchers G. Albouy, et al demonstrated in humans that sleep after training improved the motor skill performance. Neuroimaging showed that during sleep tissue in the brain was reorganized.

The Tasks You Give Students Makes a Difference!

Can writing assignments affect mood and stress hormones? Yes, according to Warnick and Liddell from Arkansas Tech University. Students were given either positive or negative writing topics. As you might expect, immediately afterwards those with positive topics had a better mood than those with negative topics. However, those in the negative topic group had reduced cortisol (stress hormone) levels! The researchers suggest that getting out their negative emotions may be helpful.

I have read other studies that show it is helpful for students to get their feelings out on paper. I usually promote positive topics for reading material, but it seems that maybe we may want to allow negative expression in our writing topics.

Early Childhood Effects on the Brain

- A poster presentation by V. Yugay et al from Seoul National University found that rats that experienced neonatal maternal separation were impaired in their ability to cope with stressful stimuli in adolescence.
- A similar study by T. Roth et al from the University of Alabama-Birmingham showed the first demonstration of the lasting impact on neuroplasticity (ability of the brain to change and learn) as a result of caregiver maltreatment (as shown in rats).
- I saw several posters on the negative effects of early material separation. While these studies are, of necessity, done on rats, there may be implications for humans. This is one more way in which our students may be more affected by stress in the classroom. Therefore, we always want to keep in mind ways in which we can reduce stress for our students when they are in our class.
- L.A. Thomas, et al (Duke and Texas State University) found that early childhood maltreatment led to children being oversensitive to anger and to fearful facial expressions.
 - Mistreated children have been shown in earlier students to have deficits in the recognition of facial expressions. Therefore, giving students a “dirty look” may not be helpful. Explicit statements of desired behavior may be more helpful in my opinion.
- On a more helpful note, K. Park et al from Sang Ji University found that only two sessions of acupuncture reduced anxiety and helped working memory. No, not suggesting we stick needles in our students, but we can help to reduce our own stress so that we can create a more stress-free classroom environment.

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FOOD FOR THOUGHT

November’s *American Journal of Clinical Nutrition* found in their longitudinal study of men and women over age 65 that B12 and folic acid might be helpful in preventing Alzheimer’s disease. Their research indicates that B12 deficiency might impair cognitive function. These nutrients can be found in oysters, fish, meat, milk, and eggs!

Gilby, et al from Carleton University presented a very exciting study. I quote from their poster: “Essential fatty acid deficiency is believed to underwrite greater vulnerability to seizure development, ASD (autism), and ADHD (attention deficit hyperactivity disorder)– like characteristics.” This may support evidence that fish oil helps cognition. Remember, it is important to consider the type of fats. Always check with your doctor before making dietary changes.

Evidence continues to mount that exercise improves the brain. According to Sam Wang at Princeton, exercise improves executive function. Executive function is mediated by the frontal lobes and consists of the type of tasks an executive might engage in: focusing attention appropriately, holding information in working memory, choosing appropriate behavior, exercising judgment. It is never too late. Research has shown that people who start exercising as late as their 60’s can cut their risk of dementia in half!!

As you have heard me say many times, we can’t make big leaps based on one or two studies, but this is all “food for thought”.

SOMETHING NEW FOR YOU!

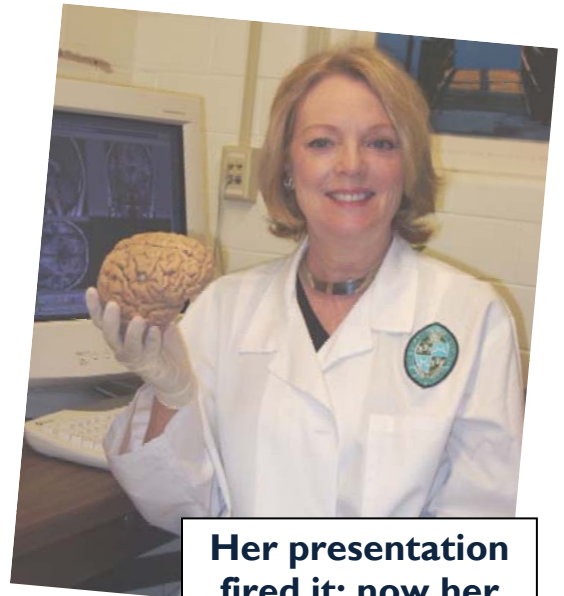
Some of you were right to pre-order the workbook as mentioned in my last newsletter, as the first printing sold out the first month. The second printing is halfway sold out at the time of the writing of this newsletter. .

Six Weeks to a Brain-Compatible Classroom: Using Brain Research to Enhance & Energize Instruction

A Workbook for Educators

by JANET N. ZADINA, PH.D.

- Reinforcement of BR&IN key concepts
- Quick reference guide to relevant facts about the brain
- Detailed and illuminating illustrations
- Dozens of ideas for using BR&IN strategies in the classroom
- Glossary of key terms
- Recommended web links
- Bibliography of titles on Dr. Zadina's bookshelf
- Handy forms and masters for executing the strategies
- Optional hand-in assignments for continuing education credits



**Her presentation
fired it; now her
workbook helps
you wire it!**

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Workbook: Six Weeks to a Brain-Compatible Classroom	Unit Price	Quantity	Extended Price
Under 75 copies	\$10.00		
75-500 copies	9.00		
500-800 copies	8.25		
800+	7.66		
Shipping (1-5 copies): \$2.66 each			
Shipping (6 and over): Add 10%			
Total Cost			

Please allow approximately two weeks for delivery from the date we receive your order. Checks will be deposited on the date books are shipped.

Mail this order form with your check made payable to:

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19717 Gulf Blvd. #11
Indian Shores, FL 33785**



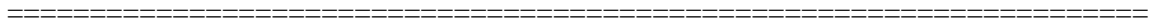
Research Update

I am preparing a research protocol for Post Traumatic Stress Disorder (PTSD), using mindfulness meditation as an intervention with Vietnam Veterans with PTSD. Eventually, I will be looking at the relationship between stress and learning and ways to intervene. I am also becoming familiar with the role of meditation and improvement in cognition, attention, and memory. I will share this information with you as the research proceeds.

DR. Z'S BOOK CLUB

I am so excited about two of the books I am reading right now, both on the subject of plasticity. These books are especially exciting for educators to read because they give us so much hope with regarding to making a difference with students with learning difficulties. The first book is *Train Your Mind Change Your Brain: How a New Science Reveals Our Extraordinary Potential To Transform Ourselves*. Don't let the title mislead you – this is not a superficial self-help book. This book reports on the collaboration between neuroscience and Buddhism and what that has taught us about how the brain can change as a result of experience. It is about the science of neuroplasticity (how the brain changes as a result of experience) and what that can mean to us in our lives. Sharon Begley, the author, does a great job of explaining the scientific experiments that are leading to this new understanding of how much power we have to change our brains and change our lives. I recommend this book to everyone.

The second book is *The Brain That Changes Itself: Stories of Personal Triumph from the Frontiers of Brain Science* by Norman Dodge. This is a fascinating account of how people have recovered from severe disabilities by rewiring their brains. Dodge describes the research using case studies. It is a fascinating read.



WEB PAGE: janetzadina.com

FINALLY! THE WEB PAGE HAS BEEN UPDATED. IT IS STILL A WORK IN PROGRESS, BUT YOU CAN FIND SOME NEW INFORMATION ON IT, INCLUDING MY UPCOMING SCHEDULE. BE SURE TO CHECK OUT THE RESEARCH SECTION AND PREVIOUS NEWSLETTERS TO GET MORE INFORMATION.

FROM THE FIELD

I love to hear from you. The following have given me permission to use their letters:

Dear Janet,
I have found success with Daniel Kobialka's Pachelbel's Canon (extended version) and his album Velvet Dreams. His other albums have selections that are also very good to focus students.
I really enjoyed your presentation at the CTA conference at UCLA this

summer. I have also used your "Ticket Out the Door" with my classes and have found so much information about what kids are thinking. Even though this wasn't part of your presentation, it was a practice that I found great applications for.

Thank you.
Kathy McDonell
Edison High School
Fresno CA

From Janet: [Master forms for the Ticket Out the Door are in the new Workbook.](#)

Dear Janet,

I teach in a variety of computer labs, mostly for adults who are ESL students, learning handicapped, or developmentally delayed to various degrees.

I can't tell you how many times I have shared the research on the "bumps" on the neurons growing with use, and disappearing with non-use. When students are discouraged because it is taking them longer than they would like to learn something, I share the memory of that fabulous little movie with them. It helps them a lot, to know that repetition is a good thing that will help them, not just something they have to do because they are stupid!

Thanks for the great newsletters.
Merry Draffan

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CONFERENCE SCHEDULE, SPRING, 2008

Conference	Location	Dates
Fullerton College	Fullerton, CA	January 25
NABE Conference	Tampa, FL	February 7
Sam Houston State University	Huntsville, TX	February 13
Education Service Center Region VI	Huntsville, TX	February 14
Coastal Region GREAT Center	Houston, TX	February 16
South Kona Complex	Big Island, HI	February 19
Kamehameha Schools	Oahu, HI	February 20
Greater San Diego Reading Association Conference	San Diego, CA	February 23

Innovations 2008 Conference	Denver, CO	March 2
The Arctic Institute on Innovations and Teaching: Celebrating Adult Learning & Culture Conference	Fairbanks, Alaska	March 7
New York State Association for Bilingual Education (SABE) Conference	Melville, NY	March 14
Professional Development Workshop	Key West, FL	April 24
Professional Development Workshop	Key Largo, FL	April 24-25
Bilingual ESL Conference	Padre Island, TX	May 9
Professional Development Workshop	Harrisburg, PA	May 15
Professional Development Workshop	Spokane, WA	May 20
Professional Development Workshop	Las Vegas, NV	May 21
Professional Development Workshop	Houston, TX	June 3
Professional Development Workshop	Polk County, FL	June 9-11
Professional Development Workshop	Sanford, FL	August 11
Professional Development Workshop	Cleveland, OH	September 18 & 19
SETESOL Conference	Birmingham	September 25
CABE Conference	Denver, CO	October 3
Valencia's Learning Conversations Conference	Orlando, FL	October 23
La Cosecha Conference	Sante Fe, NM	November 12-13

This is not a complete schedule as items are added after the newsletter is prepared. Open dates are not necessarily available due to research demands or personal travel.

IF YOU ARE INTERESTED IN SCHEDULING A WORKSHOP, CONTACT
jzadina@uno.edu.

The following topics can be presented as keynote, concurrent session or half-day or all-day workshop.

NEW TALK

Anxiety and the Brain: Overcoming Hidden Stress Triggers in the Classroom

NEW TALK:

How Culture, Experience, and Education Change the Brain: Understanding the Implication of Diversity in the Classroom

Using Brain Research to Enhance and Energize Instruction

Using Brain Research to Enhance and Energize *Language* Instruction

Brain Research and Instruction: What Administrators Need to Know

Brain Research and Instruction: What Adjuncts Need to Know

The Mystery of Attention: How the Brain Pays Attention

Is It All In Their Head?

How Brain Research Informs Our Understanding of Learning Differences

Keynote or session: Using Music to Enhance Learning.

JOB OPPORTUNITY

This came across my desk and I am passing it on:

Dear Colleague,

[Search for Chair Professors/Professors](#)

Someone asked us to contact you for the possible interest and help in this global search exercise. The Hong Kong Institute of Education is looking for a number of Chair Professors and Professors who have excellent academic profile and can provide strong academic leadership in research and teaching for various subject/discipline areas, as well as some identified 'Key Research Areas'. Attached please

find the job advertisement for the posts. Applications and nominations from scholars in the said areas are welcome.

If you or other colleagues are interested to apply for the posts, please send the completed application form (<http://www.ied.edu.hk/hro/applyfor.htm>), together with full curriculum vitae, to our Human Resources Office **BY 17 MARCH 2008**.

Thank you for your kind attention.

Warmest Regards
Centre for Institutional Research and Development
The Hong Kong Institute of Education

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SIGN UP NOW!

If someone forwarded you this newsletter and you would like to be added to the mailing list, just reply with "sign me up" in the subject line.

I would love to hear from you! Please drop me an email and share your successes! Due to the circumstances, it is best to use more than one of the following emails.

Until next time, I wish you a great semester!

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This newsletter is written by me as a service to those who have attended my workshops and conference presentations or who have requested information. It is not affiliated with my university position.

Note: You are receiving this email because you requested additional information after attending one of my conference presentations or workshops. If you do not wish to receive further information, please reply to this email with "cancel" in the subject line.