

# **SMART PRACTICE: BRAIN-BASED ESOL INSTRUCTIONAL TECHNIQUES**

**SESSION 2  
FIRST LITERACY  
MARCH 18, 2016**

# RECAP OF SESSION ONE

1. Dictation
2. What does the quote mean?
  - Explain it.
  - If possible give a classroom example.

# EXPLAIN EACH QUOTE

*“Neurons that fire together wire together.”*

*~ Donald Hebb, 1949*

*“If a schema is triggered near the moment of learning, that learning is more permanent.” ~ John Medina, 2014*

*“The more difficult the retrieval practice,  
the better it is for long-term learning.”*

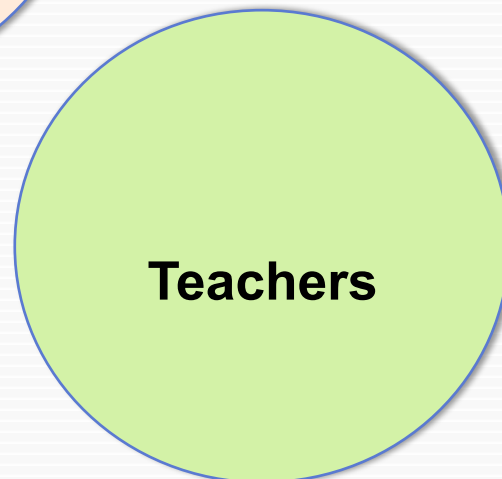
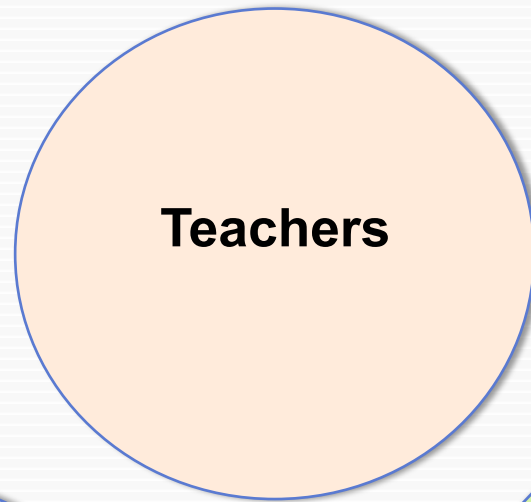
*~ Pooja K. Agarwal, et al. 2013*

# DISCUSS YOUR IMPLEMENTATION

What did you plan to do?

What did you do?

How did it go?



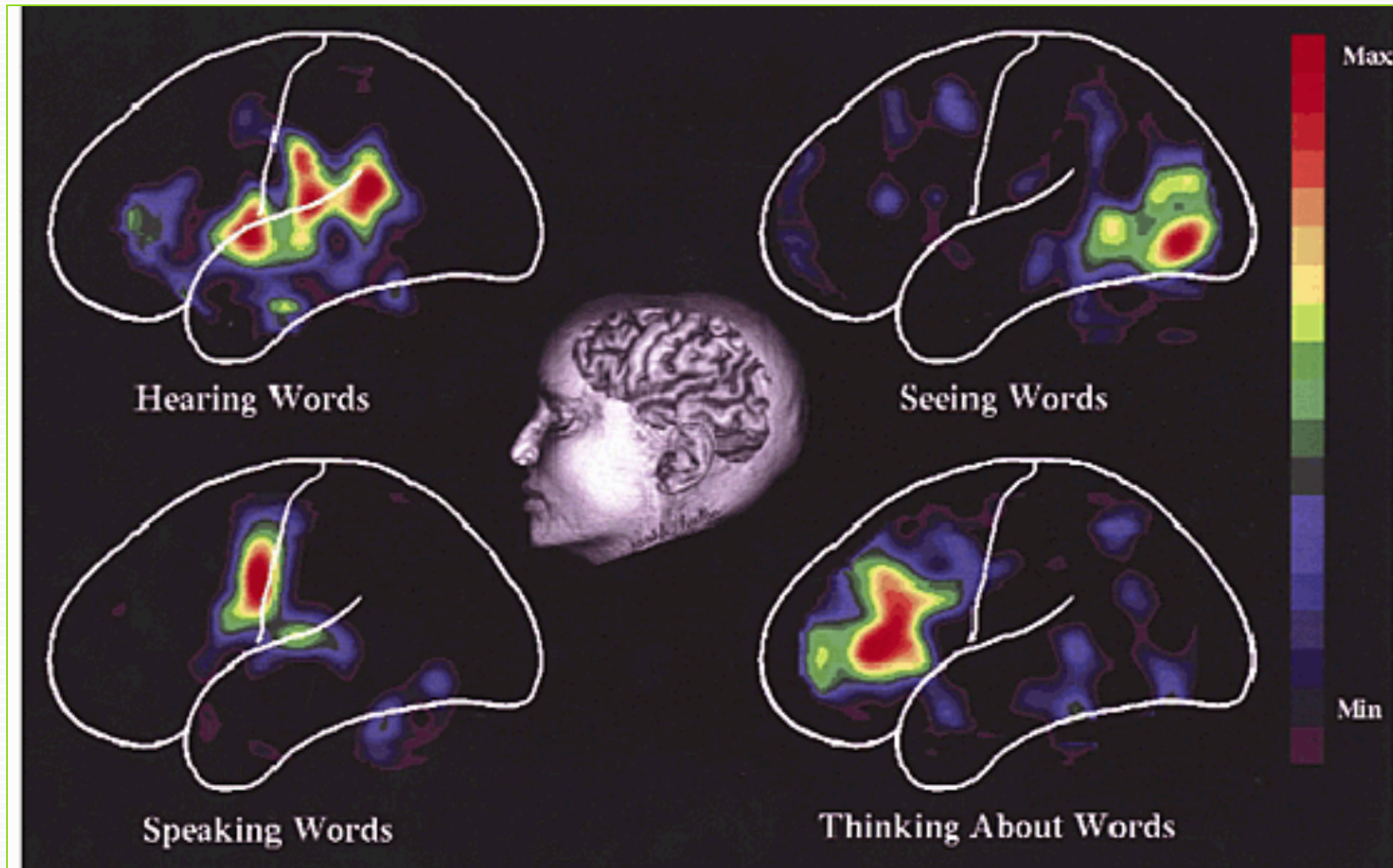


# ENCODING & RETRIEVING



**Language learning  
is a whole brain  
experience.**

# LANGUAGE & THE BRAIN

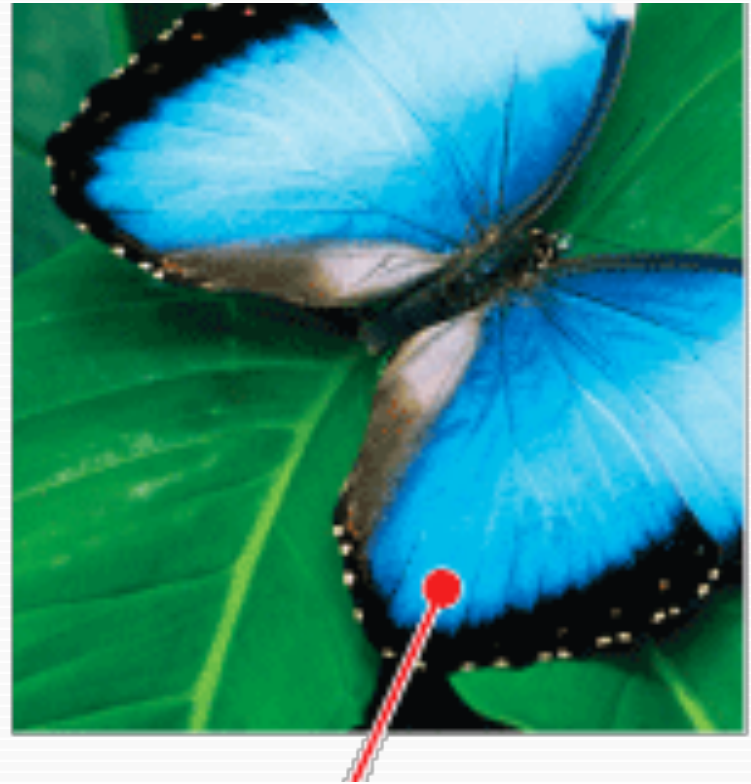
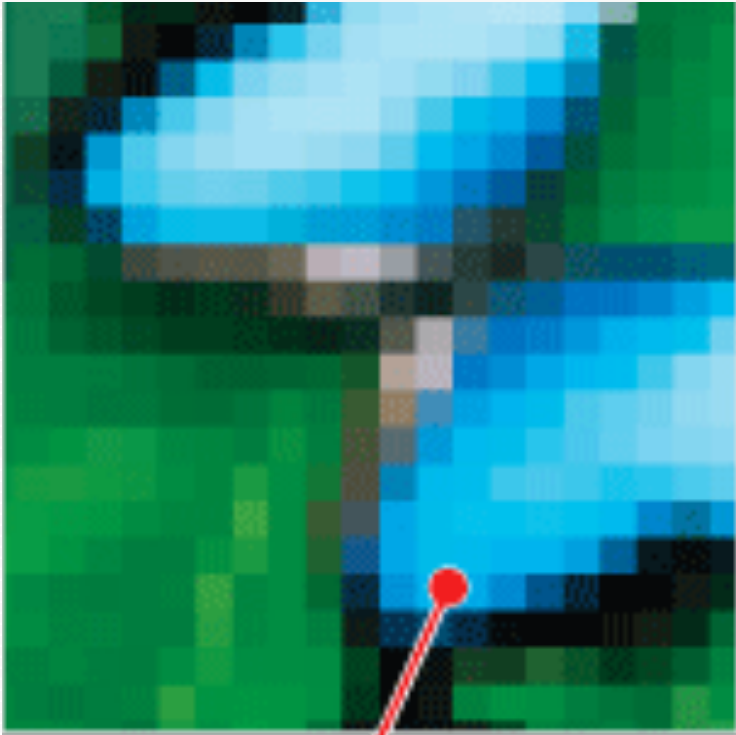


# COMBINE MODALITIES.

*“Our senses are designed to work together, so when they are combined . . . the brain pays more attention and encodes the memory more robustly.”*

~ Medina, *Brain Rules*, 2014

# MULTIPLE MODALITIES ADD RESOLUTION





# Multiple Modalities



Tommy Watson



**What are “the modalities”?**

# TEXT + VOICE

## READ ALOUD

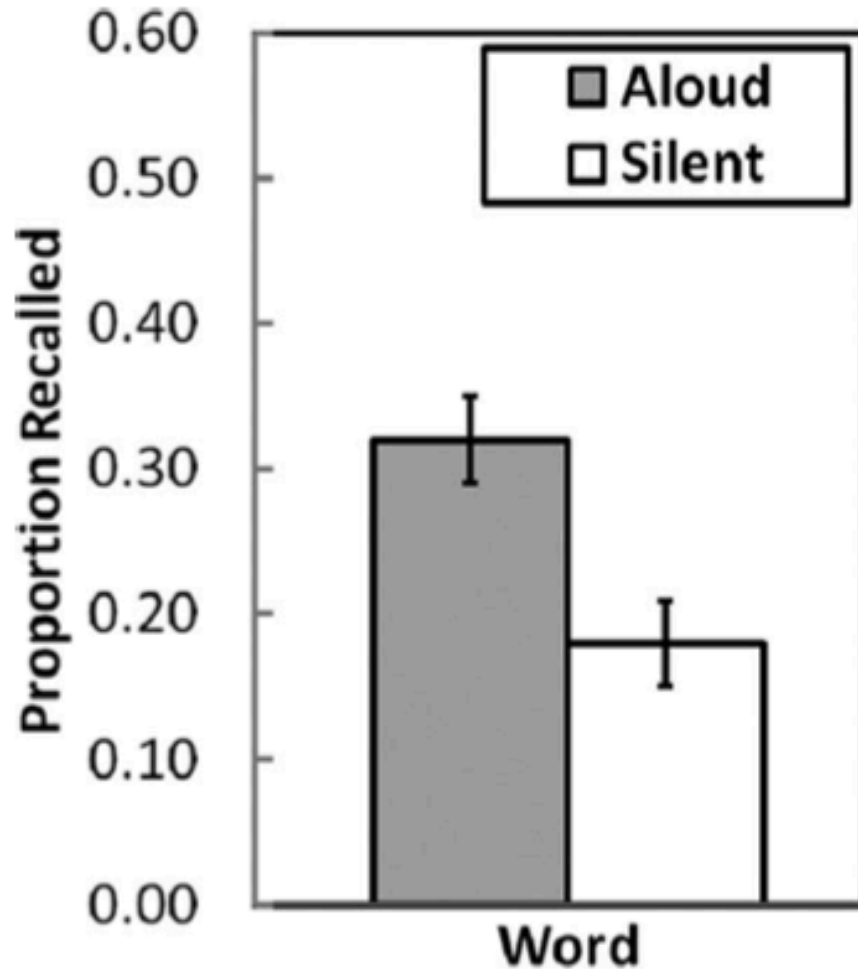
Colin Macleod tested recognition of words.

**Group A:** Read a word and say it aloud.

**Group B:** Read a word silently.



# TEXT + VOICE



MacLeod (2012)

# THE PRODUCTION EFFECT

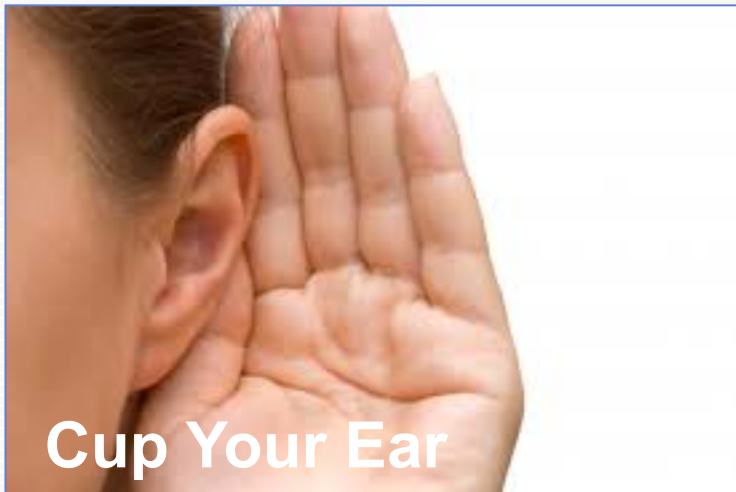
***“Saying a word aloud leads to better memory than does reading a word silently.”***

~Colin MacLeod (2013)

# READING + VOICE

Choral Reading

Echo Reading



# **SILENT READ AND REPEAT**

- 1. Teacher reads a line.**
- 2. Students read a line mouthing the words but not voicing the words.**
- 3. Then students read the line aloud.**

**Pronunciation doesn't begin in the mouth. It begins in the mind.**

# **APPLICATION: USE TEXT + VOICE**

**Review the activities on the handout.**

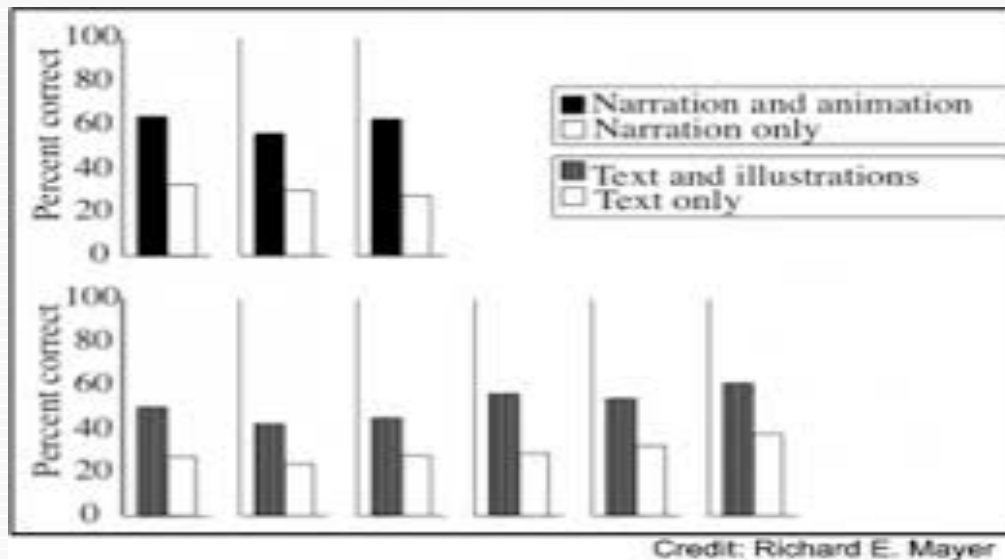
- **What is one activity you would like to try? Why?**

# TEXT + VISUALS

*“Hear a piece of information, and  
3 days later we will remember 10% of it.  
Add a picture, and we will remember 65%.”*

~ John Medina, Brain Rules, 2014

# TEXT + VISUALS: “THE MULTIMEDIA PRINCIPLE”



~ Richard Mayer, Harvard, July 2014.

# **HUMANS ARE VISUAL LEARNERS.**



<http://imgpics.gq/study-tips-for-the-visual-learner>

**More than half the human brain is  
involved with processing  
visual information.**



# **APPLICATION: USE VISUALS**

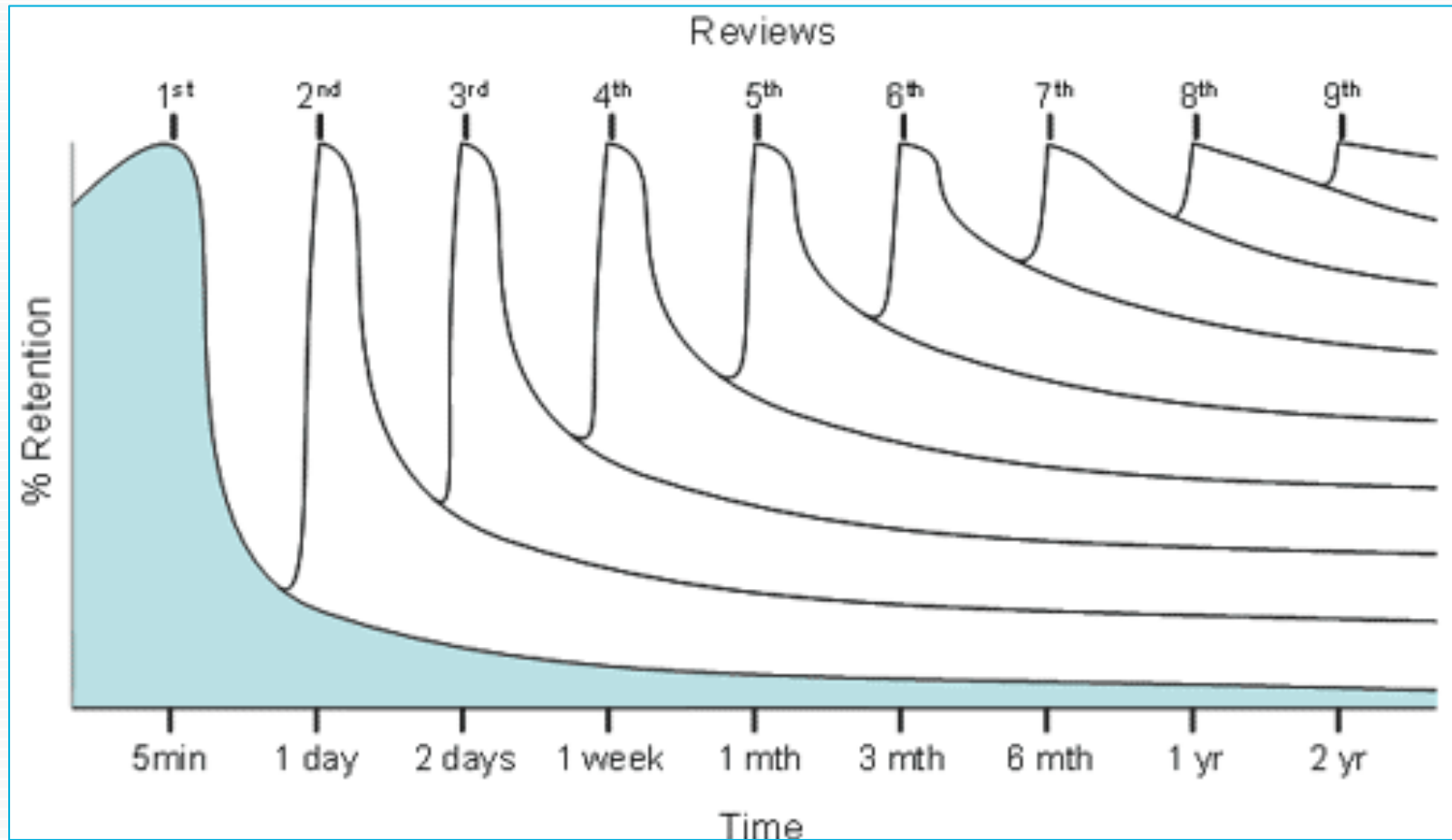
- a. What are examples of visuals?**
- b. What visuals do you use in class?**
- c. How can you get more visuals in the classroom?**

# **CONSOLIDATE YOUR LEARNING**

**True or false?**

- 1. There is one area of the brain that controls our language functions.**
- 2. Reading aloud reduces our memory of what we read.**
- 3. Our dominant sense is visual.**

# REPETITION & THE LEARNING CURVE



**Learning requires  
varied practice.**

# A CASE IN POINT

**What is more effective for learning?**

- a. Study in the same space every time.**
- b. Study in a many different environments.**

*“Forcing the brain to make multiple associations with the same material may, in effect, give that information more neural scaffolding.”*

~Carey, NYT, 2010

# **VARY WITH EACH REPETITION**

How?

**With modalities!**

# MULTIMODAL SPELLING

- Meaning
- Sound
- Print
- Movement
- Visualization
- Handwriting
- Review

synesthesia

# **EXAMPLE OF VARIED REPETITION: COLORS**

- 1. Name colors in a book.**
- 2. Name colors in the classroom.**
- 3. Name colors in a painting.**
- 4. Take a photo and name colors in the photo.**





**Louise's Field by Jessica Miller**

# **A CHECKLIST**

**Use a checklist to remind you of variety.**

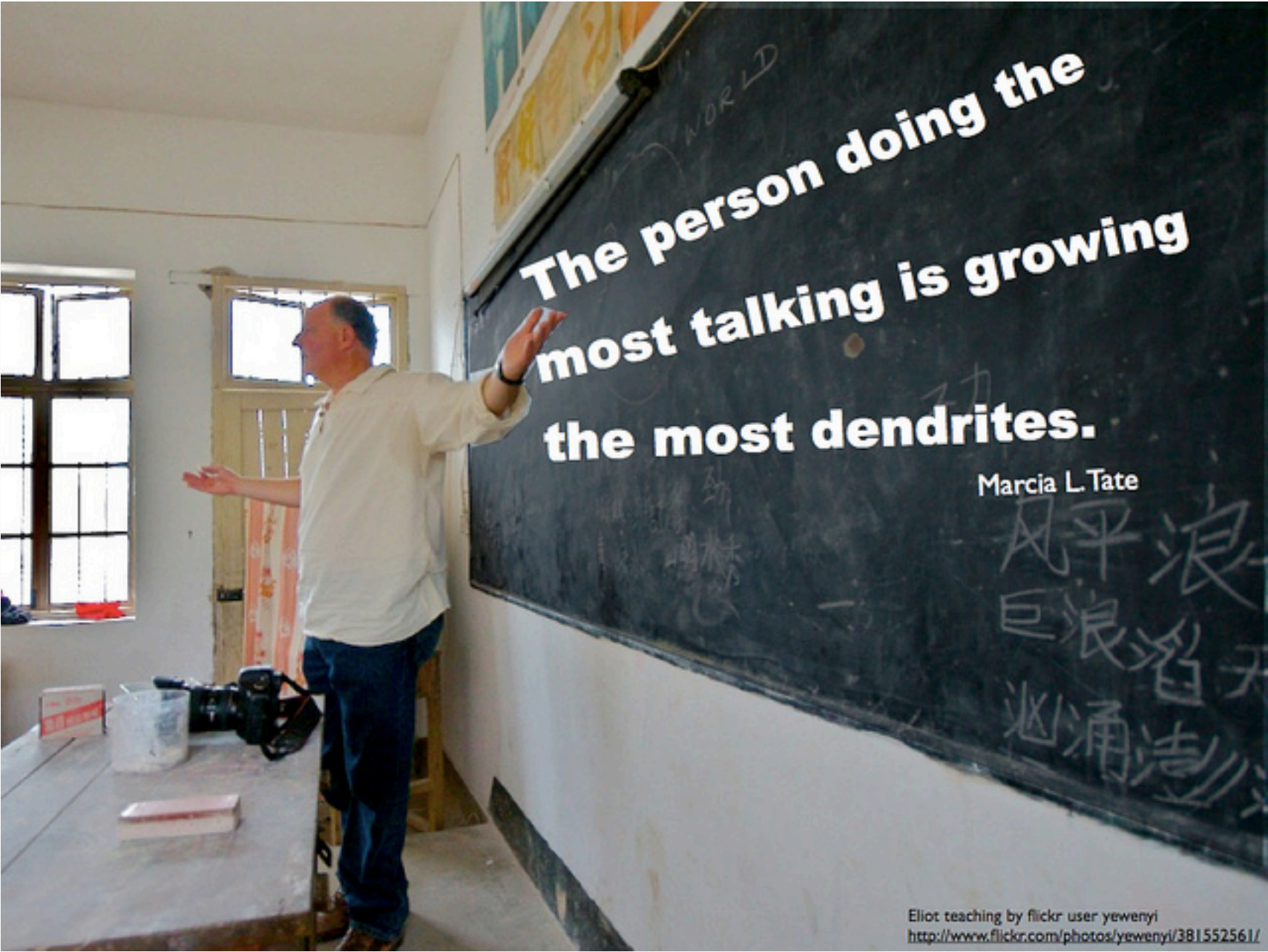
# **APPLICATION: VARY PRACTICE WITH MODALITIES**

Think of 4 different ways to practice one learning point. Use a variety of modalities.

**STUDENT  
SPEAK**

**Learning begins  
with the learner.**



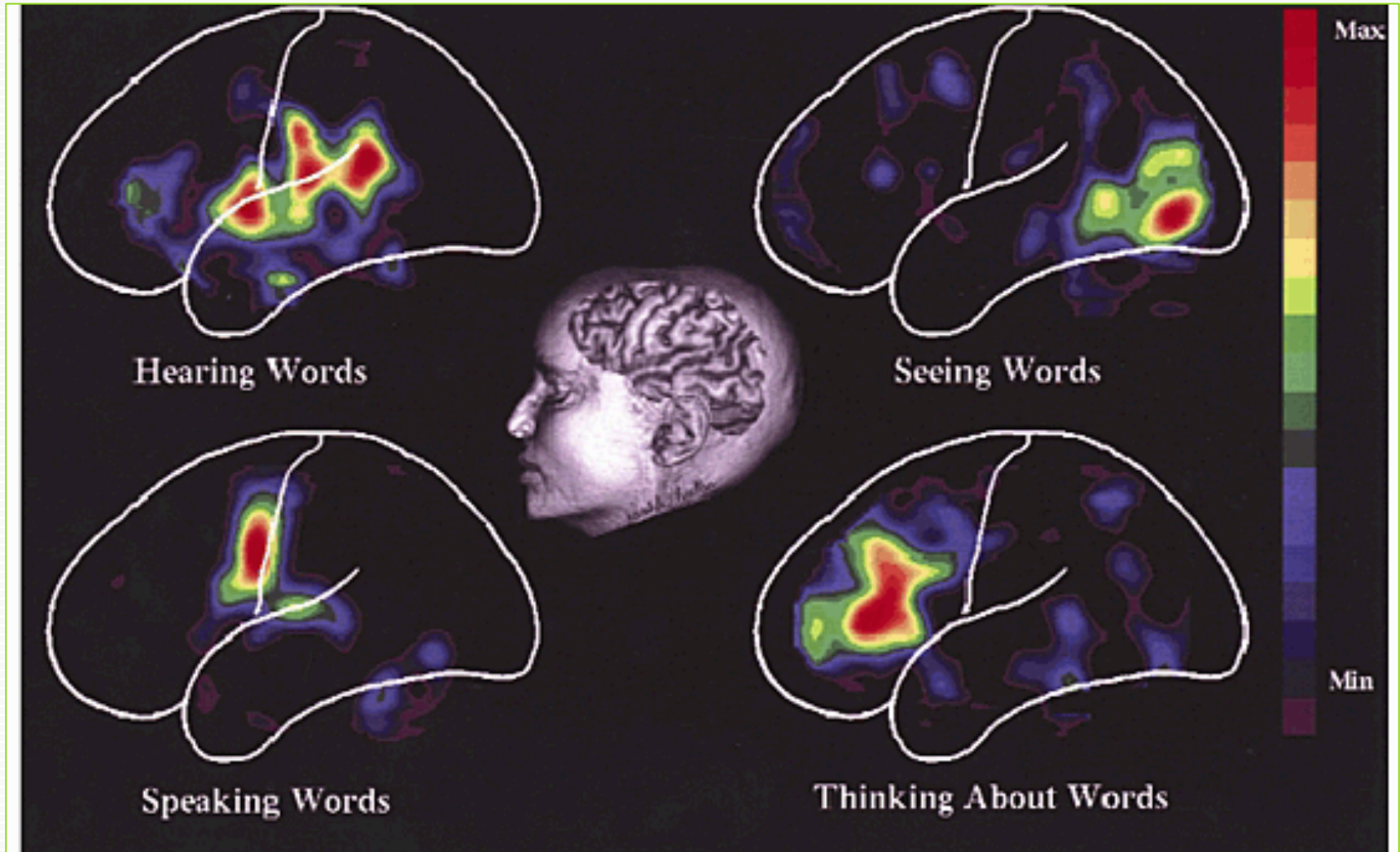


**The person doing the  
most talking is growing  
the most dendrites.**

Marcia L. Tate

# LANGUAGE LEARNING

## A Whole Brain Experience



# LET THE STUDENTS SPEAK!

*“Talking about our learning engages our frontal lobe, the area of the brain responsible for higher order thinking.”*

~ Janet Zadina *6 Weeks to Brain Compatible Classroom*, 2013



# HOW MUCH CLASSROOM TIME IS TEACHER TALK?

**55%** - TTT in high-achieving classrooms

**80%** - TTT in low-achieving classrooms

**Flanders (1970)**

**TTT = Teacher Talk Time**

# STUDENT SPEAK

**Let the students explain!**

*What is the answer?  
How do you know?*

*Please explain it to your  
partner.*

# STUDENT SPEAK

**Let the students connect the learning!**

*Why are we learning this?*

*When and where will you  
use this outside of class?*

# STUDENTS TEACHING ONE ANOTHER

Just **expecting to teach material** to another student improves a student's grasp of material

- ★ improves recall, particularly main points
- ★ improves organization of material

~ Nestojko ,Bui ,Kornell & Bjork, 2014

# STUDENT SPEAK

**Let the students explain!**

*What is the answer?  
How do you know?*

*Please explain it to your  
partner.*

# **APPLICATION: STUDENT SPEAK**

**How can you get students to speak more about their learning?**

# **RECAP**

**What did we learn about today?**

**What did we learn about last session?**

# **WRITTEN REFLECTION**

- a. What did you learn from this workshop?**
- b. What will you use in your practice?**



**KEEP IN TOUCH.**

**THANK  
YOU!**

# TOTAL RECALL



*“If you read a piece of text through twenty times, you will not learn it by heart so easily as if you read it ten times while attempting to recite it from time to time and consulting the text when your memory fails.”*

~ Francis Bacon, 1620

Figure 4. Different question formats can promote test-enhanced learning. Derived from Smith and Karpicke, 2014.

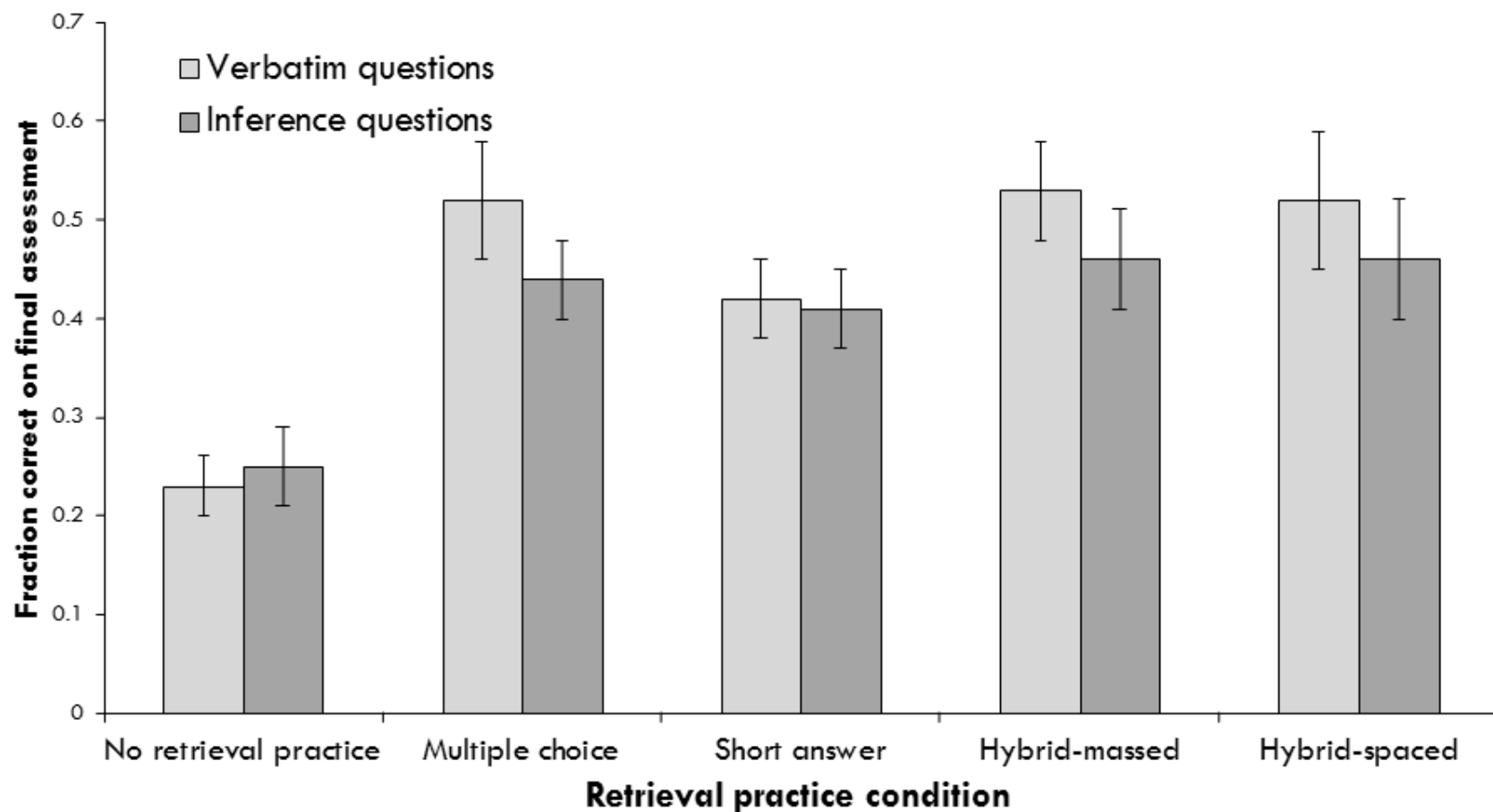
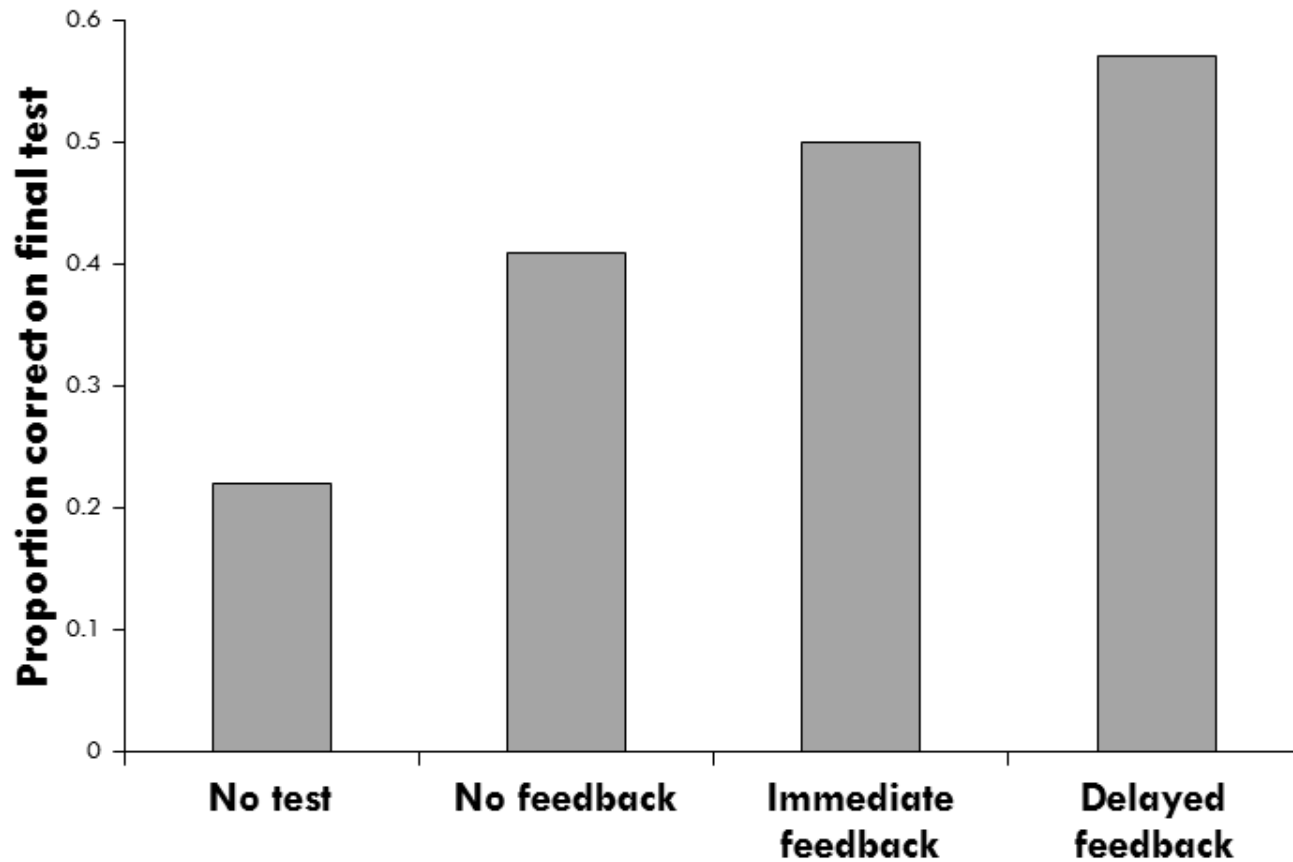


Figure 5. Feedback enhances the effects of retrieval practice. Derived from Butler and Roediger, 2008.



# MULTIMODAL PRONUNCIATION

## Paper Strips: p, ch, and initial t's

- Students hold up thin strips of paper in front of their mouth as they practice the sounds.
- The paper should bend with the burst of air.

**chop/shop**

**tin /thin**

**pin / bin**

# MULTIMODAL PRONUNCIATION

## Small Mirrors: th(unvoiced),m,p,b,v,f

Students look at their mouths in small hand held mirrors.

- The tongue with the unvoiced th.

**thanks**

- The lips meet with m, p, and b.

**time pat ball**

- The teeth on the lower lip with v and f.

**bet vet five life**

# MULTIMODAL PRONUNCIATION

## **z, th, v, b ,g, and d (voiced sounds)**

With their hands on throats, or ears plugged, students practice the (voiced) sounds that correspond to: z, th,v, b ,g, and d. They should hear a deep vibration.