Brain Dissection

Midwest Brain and Learning Institute
June 2015

Linda L. Jordan
Agenda

Welcome and Introductions

Brain Dissection

Debrief and Closing
Learning Outcomes

Experience a learning experience from a student perspective

Reflect on instructional strategies that increase student engagement

Collaborate with peers to develop and share ideas that increase student engagement

Have a deeper understanding of the brain and how it influences learning
Biggest Ah-Ha From Your Experience at the MBLI
Planning Effective Instruction
Experiencing the Lesson

Participate in the lesson.

Write down questions, notice your cognitive, emotional and social experience.

There will be time to debrief at the end of the lesson.
<table>
<thead>
<tr>
<th>Instructional Strategies</th>
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</thead>
<tbody>
<tr>
<td>Brainstorming</td>
</tr>
<tr>
<td>Cooperative Learning</td>
</tr>
<tr>
<td>Guided Practice</td>
</tr>
<tr>
<td>Inquiry</td>
</tr>
<tr>
<td>Technology</td>
</tr>
<tr>
<td>Note-taking</td>
</tr>
<tr>
<td>Research</td>
</tr>
<tr>
<td>Summarizing</td>
</tr>
<tr>
<td>Teacher Questions</td>
</tr>
<tr>
<td>Artistic Expression</td>
</tr>
<tr>
<td>Feedback/Reflection</td>
</tr>
<tr>
<td>Physical Movement</td>
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<tr>
<td>Play</td>
</tr>
<tr>
<td>Story Telling</td>
</tr>
<tr>
<td>Video</td>
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<tr>
<td>Compare &amp; Contrast</td>
</tr>
</tbody>
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Go to the following site:

http://todaysmeet.com/BrainDissection

- Log in using your initials as your name
- Please make appropriate comments and ask questions.
- Everyone in the group can see your comments and questions.
Do Now/Bell Ringer

If you have access to the Internet go to the following website:


If you do not have access to the Internet the article is available from Linda.

Read and discuss your findings at your table.
I Can/Will…

• …work in cooperative groups and hold conversations on topic
• …name at least 3 brain structures
• …give at least 3 ways a brain structure impacts my own learning
• …use resources and text to clarify unknown words
• …conduct research based on a focused question
• …use the discovery process and cooperative learning as a tools for gaining knowledge
• …name how the brain represents the scientific principle of homeostasis
K-W-L

Who is your learning club has on the most blue?
They will be the group recorder.

Using the KWL at your table please record:

What you **KNOW**

What you **WANT TO KNOW**

about the human brain and homeostasis.
Cooperative Learning

- Surgeon
- Illustrator/Recorder
- Materials Manager/Safety Engineer
- Time Keeper/Ask Teacher
Group

Record at least 3 facts, ah-ha’s.

Record at least 3 questions.

Illustrate at least 3 things.

Group definition of homeostasis.

Individually

Complete your graphic organizer

Have fun! Discover new things!
Clean Up Procedure

At (time) please stop your dissection and research

Return all books

Return brains and razor blades

Use the wipes to clean the table

Use the sanitizer to wash your hands

Begin to discuss your ah-ha’s from this experience
What did you DISCOVER?

KWL

Reflection, questions, applications....
3D Brain app
Homeostasis

- Stable operating conditions in the internal environment
- Three components interact

The response to the stimulus leads to change. The change is “fed back” to the receptor. In negative feedback, the response of the system cancels or counteracts the effect of the original stimulus.
Homeostasis
Homeostasis

What is it?

Is it important? Why?

What would we be like without it?

If you had to rank it in importance with other processes how would you rank it?
Resources


After conducting this investigation what are your questions, thoughts and ah-ha’s?
Do you wonder about any of the following: (?)

- What if we do not maintain homeostasis with our brain and body?
- Impact on head trauma from sports injuries (football, soccer, etc.)
- Impact on head trauma from car accidents
- Impact on head trauma on bike accidents (with and without a helmet)
- Impact of healthy and non-healthy diet on brain development
- Impact of poverty on brain development
- Impact of sleep on brain development
- The difference in male and female brains
- Other topics (?)
Whole Group Debrief

Student Engagement

What was the student engagement during this lesson? Justify using evidence from the lesson.

Instructional Strategies

Which instructional strategies are used? Why?

Ah-ha’s
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Examining the Standards

**ELA: SPEAKING AND LISTENING, Comprehension and Collaboration**
1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.

**ELA: LANGUAGE, Vocabulary Acquisition and Use**
4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.

**ELA: WRITING, Research to build and Present Knowledge**
7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

**ELA: READING, Range of Reading and Level of Text Complexity**
10. Read and comprehend complex literary and informational texts independently and proficiently.

**SCIENCE STANDARDS**

**HS-LS1-2.** Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

**HS-LS1-3.** Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.
Debrief, Reflection
Closing Reflection

After today, what is one thing that you’ll change in terms of how you communicate with colleagues, peers, and students around the topic of neuroscience?

One change I’ll make will be ________.
One “a-ha” I experienced during the lesson is...

One question that I still have about lesson design or neuroscience is...
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