

## Brain-Based Learning Applied

**Point of This Assignment:** To understand how the brain functions and how that functioning affects learning. To be able to apply this principle to your own prior learning experiences.

There are two primary principles to learn from this assignment on brain-based learning. First, is the pathway the brain uses for processing information. The second principle is holistic learning.

Our brain uses three different ways to process and learn: **Preverbal** (sensory input/using the senses/having personal experience), **Limbic** (having an emotional response to the experience), and **Neocortex** (having an intellectual understanding of the experience).

### **1: EMOTIONALLY-CHARGED CONTEXTS ASSIST TRUE LEARNING**

The first principle to understand is the pathway the brain takes to process information. **nothing processed by the brain must first pass through the Preverbal brain, and the Limbic brain before it can reach the Neocortex brain.** This means that there can be problems (i.e. hunger in the Preverbal, or fear in the Limbic brain) that can block the pathway, thus preventing a message from reaching the Neocortex brain.

*(Watch movie clip “Emotional Brain” from the movie “Rain Man”)*

Example: Charlie Babbitt from the movie “Rain Man” was a selfish young man filled with greed, selfishness, and anger. Consequently he could not properly receive and understand the messages his father was trying to teach him:

1. His father was trying to teach him a lesson on stealing by leaving him in jail when Charlie took his dad’s car without permission.
2. His father did not leave him his estate in his will because Charlie ended the relationship after that incident.

**Instead of learning the life lessons his father was trying to teach him, Charlie mistook his father’s actions as just another example of his dad being cold and unloving.**

### **2: MESSAGES MUST BE PROCESS BY ALL THREE PARTS OF THE BRAIN TO LEARN**

The second principle is that **true learning takes place when all three parts of the brain have had an opportunity to process the experience/concept in their own way,** then as the three processes integrate, the learner will have an “Ah, hah!” moment where s/he finally “gets it.”

As you learned, every time you experience something through the three brain processes, you have an opportunity to grow new dendrites. When these “Ah, hah!” moments happen, it is a result of your dendrites actually connecting.

*(Watch movie clip “Synapses Connecting” from the movie “Mr. Holland’s Opus”)*

Example: (from the movie “Mr. Holland’s Opus”)

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- 1) Mr. Holland had learned at a young age that Beethoven was deaf, but this didn't mean much to him because he had no experience to connect this with the significance of what it meant to be a deaf composer. (*Neocortex – Intellectual understanding*).
- 2) Mr. Holland tried to teach his son an appreciation of music while he was still in his mother's womb (*Preverbal – experience/auditory sensory input*).
- 3) Then he discovered his son was deaf from birth, and consequently his son would not be able to learn to appreciate music – the love of his life. (*Limbic – he had an emotional response – sadness*).
- 4) The final scene in the clip – teaching his students about Beethoven being deaf: **Now, all three brain functions have processed the concept. – Finally he registers the significance of the fact that Beethoven was a brilliant composer despite being deaf. --- Now, he is consumed with grief over his son being deaf.**

*The point here is that you may think you have learned an idea in your head and fully understand it intellectually. However, until you have had personal and emotional experience with it, you have not truly learned it. But once you have, you will equally and truly be able to use and apply it in your life and appreciate why it is important to know.*

Now you will apply these principles to your own life:

### **Principle 1:**

Think of a time in your life when you were supposed to learn some lesson or principle, but you didn't or couldn't because the message was blocked from reaching your Neocortex brain by either a physiological problem (hunger, pain, cold, hot, tired, etc.) or an intense emotional reaction (fear, anger, pain, hurt, sadness, embarrassment, etc.). A lesson you had to learn the hard way, would be a good example – especially, if someone tried to warn you ahead of time.

Describe the situation:

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What was the principle or lesson that was supposed to be learned?

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What stopped you from learning that lesson learning it originally?

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Since you could not properly receive the message, how did you misunderstand the experience?

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What happened (probably sometime later) that allowed you to finally understand the message?

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Now that you understand the idea that all three parts of your brain need to be tended to in order to learn, take the time to apply this to your studies. What should you do to make sure your Neocortex and Limbic needs are met before coming to class (*or doing homework*) so that you will be able concentrate on your school work?

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### **Principle 2:**

Use an example of something from your life that you feel you have really learned well. If you have truly “gotten it,” **then you have likely had and opportunity to process the idea through all three parts of your brain:** Preverbal (sensory input/using the senses/having personal experience), Limbic (having an emotional experience), and Neocortex (having an intellectual understanding).

What was the idea/theory/concept you learned well? \_\_\_\_\_

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What caused you to become good at this subject? \_\_\_\_\_

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Describe the personal experience (Preverbal) you had that allowed you to relate to the concept you learned.

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Describe an emotional response (Limbic) you had to the experience or the learning that allowed you to really appreciate the concept you learned.

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Describe what helped you to understand (Neocortex) the concept you learned.

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As you had all three of these experiences, they probably didn't happen at the same time (*like Mr. Holland*); rather they had likely occurred at different times (possibly years apart). Therefore, take note of which activity (personal experience, emotional reaction, or intellectual understanding) occurred first, second and third?

First \_\_\_\_\_ Second \_\_\_\_\_ Third \_\_\_\_\_

Describe your "Ah, hah!" moment (dendrites connecting) when you actually "got it." What has ultimately resulted from you truly "getting it?" – In other words, how has this "true learning" affected you and/or your life?

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Now that you understand the idea that all three parts of your brain need to process information in their own way in order to learn, take the time to apply this to your studies. What should you do to make sure your Neocortex and Limbic areas of your brain are able to process WHAT you are trying to learn? (*I.e. Connect what you are learning to your personal experiences and emotions.*)

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### **Test your understanding:**

**What is the main point of this assignment?**

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**Why were you expected to do this exercise?**

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**What type of person would need to do this exercise?**

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**How well do you fit the profile of the person for whom this assignment was created?**

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**Reflection:** (*Write down your response after completing this assignment.*)

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