

# Vale Middle School Reading Article

*Scientists Discover How to 'Upload Knowledge to Your Brain' (1180L)*

**Instructions: COMPLETE ALL QUESTIONS AND MARGIN NOTES using the CLOSE reading strategies practiced in class. This requires reading of the article three times.**

**Step 1: Skim** the article using these symbols as you read:

(+) agree, (-) disagree, (\*) important, (!) surprising, (?) wondering

**Step 2: Number** the paragraphs. **Read** the article **carefully** and **make notes in the margin**.

Notes should include:

- Comments that show that you **understand** the article. (A summary or statement of the main idea of important sections may serve this purpose.)
- Questions you have that show what you are **wondering** about as you read.
- Notes that differentiate between **fact** and **opinion**.
- Observations about how the **writer's strategies** (organization, word choice, perspective, support) and choices affect the article.

**Step 3: A final quick read** noting anything you may have missed during the first two reads.

Your **margin notes** are part of your score for this assessment. Answer the questions carefully in **complete sentences** unless otherwise instructed.

Student \_\_\_\_\_ Class Period \_\_\_\_\_

## Scientists discover how to 'upload knowledge to your brain'



*Click on image to access video*

Feeding knowledge directly into your brain, just like in sci-fi classic *The Matrix*, could soon take as much effort as falling asleep, scientists believe.

Researchers claim to have developed a simulator which can feed information directly into a person's brain and teach them new skills in a shorter amount of time, comparing it to "life imitating art".

They believe it could be the first steps in developing advanced software that will make Matrix-style instant learning a reality.

In the neo-noir sci-fi classic, protagonist Neo is able to learn kung fu in seconds after the martial art is 'uploaded' straight to his brain.

*Notes on my thoughts, reactions and questions as I read:*

*Scan QR code to access text*



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Researchers from HRL Laboratories, based in California, say they have found a way to amplify learning, only on a much smaller scale than seen in the Hollywood film.

They studied the electric signals in the brain of a trained pilot and then fed the data into novice subjects as they learned to pilot an aeroplane in a realistic flight simulator.

The study, published in the journal *Frontiers in Human Neuroscience*, found that subjects who received brain stimulation via electrode-embedded head caps improved their piloting abilities and learnt the task 33 per cent better than a placebo group.

"Our system is one of the first of its kind. It's a brain stimulation system," explained Dr. Matthew Phillips.

"It sounds kind of sci-fi, but there's large scientific basis for the development of our system.

"The specific task we were looking at was piloting an aircraft, which requires a synergy of both cognitive and motor performance.

"When you learn something, your brain physically changes. Connections are made and strengthened in a process called neuro-plasticity.

"It turns out that certain functions of the brain, like speech and memory, are located in very specific regions of the brain, about the size of your pinky."

Dr. Matthews believes that brain stimulation could eventually be implemented for tasks like learning to drive, exam preparation and language learning

"What our system does is it actually targets those changes to specific regions of the brain as you learn," he added.

"The method itself is actually quite old. In fact, the ancient Egyptians 4000 years ago used electric fish to stimulate and reduce pain.

"Even Ben Franklin applied currents to his head, but the rigorous, scientific investigation of these methods started in the early 2000s and we're building on that research to target and personalise a stimulation in the most effective way possible.

"Your brain is going to be very different to my brain when we perform a task. What we found is ... brain stimulation seems to be particularly effective at actually improving learning."

*Notes on my thoughts, reactions and questions as I read:*

*This article addresses the following CCSS ELA Standards in addition to those noted.*

*7/8.W.1,2,3,4,5,6,7,8,9,10  
7/8.L.1,2,3,4,5,6,  
7/8.SL.1,2,3,4,5,6*

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**Comprehension questions – answers may be in phrases.**

1. *What famous American is said to have used electrical brain stimulation, according to the text?*
2. *Name the process that creates and strengthens brain connections.*
3. *Define **implemented** as used in the article.*
4. *Which sentence best supports the premise that this technology may not be quite ready for public use?*
5. *Define **feeding** as used in the text.*

7/8.RI.1,4,5,6

**Answer each question in one or more complete sentences and by providing complete explanations.**

1. *How quickly do scientists predict getting information into the brain may be should the process explained actually work? Which line from the text best supports your response?*
2. *Explain the spelling of **aeroplane** and **personalise** as used in the text.*

7/8.RI.1,2,3,4,5

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**3.** *Based on the evidence presented, what would be the number one skill you, personally, would choose to have 'uploaded to your brain'? Explain fully citing evidence from the text to support your opinion.*

7/8.RI.1,5,8

**4.** *Approximately what year did Egyptians use similar techniques to stimulate the brain? Show your work; answer in a complete sentence.*

7/8.RI.5,8