





Smart Strategy: Think of the Brain as a Muscle

By Charles Q. Choi

February 8, 2007

- 1 Students who are told they can get smarter if they train their brains to be stronger, like a muscle, do better in school, a new psychology study shows.
- 2 Many people have various theories about the nature of **intelligence**. Some view it as a **fixed trait**, while others see **intelligence** as a quality that can develop and expand or as a **growth mindset**.
- 3 These ideas can have a **profound** effect on the **motivation** to learn, said researcher Carol Dweck, a child and social psychologist at Stanford University.
- 4 “Those who follow a **fixed theory** are concerned with whether they look smart or dumb. They don’t enjoy tasks that are difficult, where if they have a setback they can look dumb,” Dweck explained. “Those who think **intelligence** is something you can **cultivate** are much more interested in being challenged than in just looking smart. They are much more **resilient** and **persistent** and not as worried about making mistakes.” These people have a **growth mindset**.
- 5 Dweck had an experience in 6th grade in Brooklyn that made her want to understand which views people held on **intelligence**.
- 6 “My teacher seated us around the room in IQ¹ order,” she told *LiveScience*. “All the responsibilities were assigned to high-IQ students. Looking back, I always enjoyed learning before, but the experience in that class wasn’t about learning, it was about feeling like you had to always look smart or get demoted to one of the lesser seats.”
- 7 “Working in that **fixed framework** had a **profound** influence on me,” Dweck said. “It was one where **intelligence** was equated with worth.”
- 8 To see what effects different theories of **intelligence** had on schoolwork, Dweck and her colleagues followed 373 New York City 12-year-olds over a course of two years of junior high school. While all the students began the study with roughly the same math achievement test scores, those with a **fixed mindset** did worse in math, with the gap widening over the years.
- 9 “When you have a **fixed view**, you kind of run away from mistakes and setbacks, since you think they mean you’re not smart,” Dweck said. “The **fixed view** doesn’t give students a good way to repair their **deficiencies**. If you believe your ability is permanently fixed, and you don’t do well, there’s no good route to come back from that.”

Annotation Markers: Determining an Identity

Marking symbol	Meaning of symbol	Use this symbol to mark ...
 star	Important; I need to remember this	main idea; thesis; claim; key concept
 exclamation mark	Wow! Really? Fascinating!	surprising fact or detail; interesting comment or explanation
 question mark	I am confused; I don't understand; I wonder	a difficult passage; something curious; a section that doesn't make sense
 arrow	These ideas are linked; This word is defined here	connections; related ideas; repeated points

Language Frames for Socratic Seminar

Present or Contribute an Idea	
Use the text	<ul style="list-style-type: none"> The statement/comment that _____ made me think about _____. While reading _____, I realized _____. _____ became clear to me when I read _____.
Ask a question	<ul style="list-style-type: none"> What was meant by _____? What did the author mean by _____? How is _____ related to _____? What is the connection between _____ and _____? Why was it important that _____? Why did the author mention _____?

Respond to an Idea	
Add your thinking to the idea	Seek to better understand the idea
<ul style="list-style-type: none"> <input type="radio"/> I also think that _____. <input type="radio"/> In addition, it occurred to me that _____. <input type="radio"/> To take it one step further, consider _____. <input type="radio"/> Another example of _____ is _____. 	<ul style="list-style-type: none"> <input type="radio"/> I am still wondering about _____. <input type="radio"/> I am having a hard time understanding why _____. <input type="radio"/> I need more information regarding _____. <input type="radio"/> I continue to be confused by _____.
Take the idea in a different direction	Connect the idea to something else
<ul style="list-style-type: none"> <input type="radio"/> That's not exactly how I understood _____. <input type="radio"/> Let's consider the possibility that _____. <input type="radio"/> _____ can also be interpreted as _____. <input type="radio"/> I see it differently; in my opinion, _____. 	<ul style="list-style-type: none"> <input type="radio"/> _____ reminds me of _____. <input type="radio"/> _____ is similar to _____. <input type="radio"/> _____ can also be found in _____. <input type="radio"/> _____ is linked to _____ by _____.

Reflect on the Dialogue	
Evaluate my understanding	<ul style="list-style-type: none"> As a result of the comment about _____, I _____. The conversation helped me understand/realize _____. I still need help with _____.
Examine the seminar process	<ul style="list-style-type: none"> The conversation could have been improved by _____. The seminar was useful because _____. During the next seminar, I will _____.