Supplementary Material

1 Supplementary Data

Appendices

Appendix A Writing prompt

Please submit your response essay to <u>www.pigai.com</u> (Assignment No.____)

• Directions: Please read two articles about global warming. During your reading, try to work out the main claims, argument structure and key messages. Based on your understanding of the articles, write a response essay in English above 250 words, in which you need explicitly state and discuss your point of view on whether global warming exists at all. In your essay:

- •Please explicitly state your opinion on the existence of global warming;
- •Organize your ideas with an appropriate structure;

•If you need use the information from the articles, please appropriately quote from the articles or use your own language to paragraph or summarize the original ideas; do not forget to acknowledge the source of such information.

•Underline the parts in the original articles you borrow in your own essay.

<u>Note</u>: In 2 days after the task, please submit a reflective journal based on given requirements onto <u>www.pigai.com</u> (Assignment No.____)

Before the task begins, right now, do you believe that global warming does exist?

Appendix B Requirements of reflective journal writing

The reflective journal is an account of your writing process. Please include the following aspects:

•Please introduce your knowledge about global warming before the writing task.

•How did you establish your main point of view? Please describe the process of decision making.

What is the most important factor for your final view decision?

- •When did you start planning your own essay?
- How did you conduct the reading of the two given articles? Please describe the reading process.

•Was the reading helpful to your writing? If yes, in which aspect was the reading most helpful? For example, view decision, structuring, source of content, vocabulary, sentence pattern, etc. Give examples please.

•Did the reading bring about any trouble for your writing? If yes, what is it?

- •Did you start planning your writing when reading the two articles?
- •Did you refer back to the articles when writing? If yes, when did you refer back to the articles?

•Did you revise your essay after you finished writing? If yes, what did you revise? Did you refer back to the articles when revising?

•What impressed you most in the process of the reading and writing task?

You can choose to write the reflective journal either in Chinese or in English.

Appendix C A retrospective interview

1. Before the task commenced, what did you know about the topic global warming / rote learning? Did you take any interest in this topic? What was your opinion on the topic then?

2. Before the task commenced, did you start thinking about how to write your response essay?

3. When did you finally decide on your viewpoint? Why did you make such a decision? Can you point out the thesis statement of the readings?

4. What strategies did you use during reading? For example, which reading did you read first? How many times did you read the texts? Did you have different objectives for each reading? Did you take notes or make marks during reading?

5. Did the reading texts trigger you to think about anything from your memory? What are they? Did such thoughts appear in your essay?

6. When reading, did you start thinking about your writing? If yes, what did you think about for your writing?

7. After finishing your reading, did you change your viewpoint on the topic compared to that before the task commenced? Did the view of the reading texts influence your viewpoint establishment? How did they influence your viewpoint?

8. Did you produce an outline for your essay before writing?

9. During writing, did you need refer back to the reading texts? If yes, when did you need refer back?

10. In your own essay, which part includes the content from the reading texts? Briefly explain why you use such a word / phrase / idea, etc.

11. After finishing your writing, did you revise your essay? What did you revise? When revising, did you need refer back to the reading texts?

12. What impressed you most in the process of such a reading and writing task? (For example, the influence of the reading texts, your interest in the topic and familiarity with the topic, the difficulty to express your ideas about the topic in English, etc.)

Appendix D Source Texts

Source texts on global warming

Source text 1 (supporting the existence of global warming crisis)

http://news.nationalgeographic.com/2016/11/nasa-ice-bridge/

Climate Change Captured in Stunning Antarctic Ice Photos

By Brian Clark Howard Nov. 3rd, 2016

Climate change can be hard to visualize, because it tends to happen at a relatively creeping pace, not in one dramatic surge, as Hollywood often likes to depict.

But new photos from NASA flights provide a fresh look at melting ice. For the past eight years, NASA has been flying Operation IceBridge missions in research planes over the poles, in order to gather more visual data on the impact of warming temperatures.

To help make this work more accessible to the public, in late October, photographer Mario Tama flew on three of NASA's IceBridge flights over Western Antarctica and the surrounding sea ice, leaving out of Punta Arenas, Chile. The trip was timed to coincide with the start of the melt season (spring) in the Southern Hemisphere.

The photos couldn't be more timely, since NASA and University of California, Irvine scientists have recently reported the fastest retreats of Western Antarctica's glaciers yet recorded.

A study published on October 25, drawing on IceBridge data, found that warm water is melting the undersides of the ice sheets. This could cause the large buttresses holding up vast amounts of ice to fail, leading to a rapid release of ice into the sea, along the lines of pancake batter flattening out.

If all the ice on the world's land melted it would raise sea level about 216 feet. Scientists have estimated melting all that ice could take 5,000 years, although the precise rate is hotly debated. How much the world is able to hold down carbon emissions will also strongly affect the rate of melting, scientists warn.

Flying in an "old, sturdy, beautifully reliable DC-8," Tama was most struck by the massive scale of the existing ice.

"Occasionally one could spot a seal or a penguin, but they were so tiny amidst the never-ending landscape that they were essentially impossible to photograph," he says.

"At times it really felt like a lunar mission, or a mission to Venus," says Tama. "The scenes, shapes, and sizes of the features in Antarctica were often otherworldly ... and just insanely, unimaginably beautiful."

Such a sea of ice had once covered North America during the last ice age, a reminder of how variable climate can be over time, and how just a few degrees in average temperature can make a huge difference in the landscape.

Tama says his goal was to "document this slice of the planet that is alien to most of us." He adds, "I hope my photographs will in some small way support the incredibly important work the scientists are doing. These folks are the heroes."

The IceBridge work comes at the same time that the United Nations Environment Programme has released a report analyzing all the commitments that countries have made to address global warming, based on the agreement struck in Paris last year. The current commitments on the table will only put the world on track to keep average global warming at 3 degrees Celsius, the report warns, instead of the 2 degrees that countries had agreed would stave off the worst impacts of warming, such as rising seas and extreme weather.

"If we don't start taking additional action now, we will grieve over the avoidable human tragedy," Erik Solheim, chief of the UNEP, told the Guardian.

That tragedy could include flooded cities, inundation by saltwater of wells, extreme weather, and searing heat waves, among other impacts.

Representatives of most countries will be meeting to discuss implementation of the Paris climate agreement next week in Morocco, at a United Nations summit.

Flesch Reading Ease: 48.8

Source text 2 (opposing the existence of global warming crisis) http://politicalticker.blogs.cnn.com/2014/02/20/cruz-to-cnn-global-warming-not-supported-by-data/ **Cruz to CNN: Global warming not supported by data**

Posted by

CNN Chief Congressional Correspondent Dana Bash and CNN Senior Congressional Producer Deirdre Walsh

Beaumont, TX (CNN) – Sen. Ted Cruz, R-Texas, questions whether global warming is real, arguing that the "data are not supporting what the advocates are arguing."

"The last 15 years, there has been no recorded warming. Contrary to all the theories that – that they are expounding, there should have been warming over the last 15 years. It hasn't happened," said Cruz.

Cruz spoke to CNN in an exclusive interview following an event here to promote his new energy plan, which he says he will formally introduce in the Senate next week.

When pressed about the fact that the arctic is melting, and whether that helps prove climate change is real, Cruz dismissed it.

"Other parts are going up. It is not - you know, you always have to be worried about something that is considered a so-called scientific theory that fits every scenario. Climate change, as they have defined it, can never be disproved, because whether it gets hotter or whether it gets colder, whatever happens, they'll say, well, it's changing, so it proves our theory," argued Cruz.

"I am always troubled by a theory that fits every perfect situation. You know, back in the '70s - I remember the '70s, we were told there was global cooling. And everyone was told global cooling was a really big problem. And then that faded. And then we were told by Al Gore (former US vice-president, an advocate to curb global warming) and others there was global warming and that was going to be a big problem. And then it morphed. It wasn't global warming anymore, it became climate change. And the problem with climate change is there's never been a day in the history of the world in which the climate is not changing," said Cruz.

Secretary of State John Kerry recently made waves by declaring climate change is "perhaps - perhaps the world's most fearsome weapon of mass destruction."

Not surprisingly, Cruz disagreed.

"Well, you know, it is ironic that Secretary Kerry would say that, uh, given that he is, right now, in the process of negotiating with the nation of Iran in - in what Israel's prime minister, Benjamin Netanyahu, has called an historically bad deal," said Cruz.

"It is ironic that he sees a greater threat from your SUV (sports utility vehicle) in your driveway than he does from the nation of Iran, with their radical Islamic jihad and - and their stated desire to obliterate,

to annihilate Israel. He sees a greater threat from your SUV than he does to Iranian nuclear weapons," Cruz said of Kerry.

Cruz chose the Spindle Top Boomtown Museum here, where oil discovery sparked the Texas oil boom more than a century ago, to push his ideas to support what he calls a "great American energy renaissance."

His proposal includes many traditional GOP (Grand Old Party, a nickname for the Republican party) ideas – more oil drilling and expanding energy exploration and repealing many EPA regulations he calls harmful.

Missing from his official plan are other forms of energy, what Republicans call "all of the above," but he told CNN he does support alternative energy, as long as it comes from the private sector, not the federal government.

"We ought to be allowing the private sector to pursue every form of energy because the energy of the future, it's not going to come from the government picking winners and losers," Cruz told CNN.

"We ought to open up energy innovation across the board and - and remove the barriers to every form of energy."

Flesch Reading Ease: 55.2

Source text 3 (supporting the existence of global warming crisis) http://earthobservatory.nasa.gov/Features/GlobalWarming/page4.php

Is Current Warming Natural?

In Earth's history before the Industrial Revolution, Earth's climate changed due to natural causes not related to human activity. Most often, global climate has changed because of variations in sunlight. Tiny wobbles in Earth's orbit altered when and where sunlight falls on Earth's surface and therefore have alternately increased and decreased the amount of solar energy reaching Earth. Volcanic activity has also, in the deep past, increased greenhouse gases over millions of years, contributing to episodes of global warming.

These natural causes are still in play today, but their influence is too small or they occur too slowly to explain the rapid warming seen in recent decades. We know this because scientists closely monitor the natural and human activities that influence climate with a fleet of satellites and surface instruments.

NASA satellites record a host of vital signs including atmospheric aerosols (particles from both natural sources and human activities, such as factories, fires, deserts, and erupting volcanoes), atmospheric gases (including greenhouse gases), energy radiated from Earth's surface and the Sun, ocean surface temperature changes, global sea level, the extent of ice sheets, glaciers and sea ice, plant growth, rainfall, cloud structure, and more.

On the ground, many agencies and nations support networks of weather and climate-monitoring stations that maintain temperature, rainfall, and snow depth records, and buoys that measure surface

water and deep ocean temperatures. Taken together, these measurements provide an ever-improving record of both natural events and human activity for the past 150 years.

Scientists integrate these measurements into climate models to recreate temperatures recorded over the past 150 years. Climate model simulations that consider only natural factors since 1750—omitting observed increases in greenhouse gases—are able to fit the observations of global temperatures only up until about 1950. After that point, the decadal trend in global surface warming cannot be explained without including the contribution of the greenhouse gases added by humans.

Though people have had the largest impact on our climate since 1950, natural changes to Earth's climate have also occurred in recent times. For example, two major volcanic eruptions, El Chichon in 1982 and Pinatubo in 1991, pumped sulfur dioxide (二氧化硫) gas high into the atmosphere. The gas was converted into tiny particles that lingered for more than a year, reflecting sunlight and shading Earth's surface. Temperatures across the globe dipped for two to three years.

Although volcanoes are active around the world, and continue to emit carbon dioxide as they did in the past, the amount of carbon dioxide they release is extremely small compared to human emissions. On average, volcanoes emit between 130 and 230 million tons of carbon dioxide per year. By burning fossil fuels, people release in excess of 100 times more, about 26 billion tons of carbon dioxide, into the atmosphere every year. As a result, human activity overshadows any contribution volcanoes may have made to recent global warming.

Changes in the brightness of the Sun can influence the climate from decade to decade, but an increase in solar output falls short as an explanation for recent warming. NASA satellites have been measuring the Sun's output since 1978. The total energy the Sun radiates varies over an 11-year cycle.

Each cycle exhibits subtle differences in intensity and duration. Scientists theorize that there may be a multi-decadal trend in solar output, though if one exists, it has not been observed as yet. Even if the Sun were getting brighter, however, the pattern of warming observed on Earth since 1950 does not match the type of warming the Sun alone would cause. Instead, observations show the pattern expected from greenhouse gas effects: Earth's surface and troposphere (对流层) have warmed, but the stratosphere (同温层) has cooled.

Flesch Reading Ease: 33.4

Source text 4 (opposing the existence of global warming crisis)

http://www.express.co.uk/news/clarifications-corrections/526191/Climate-change-is-a-lie-globalwarming-not-real-claims-weather-channel-founder

'Global warming the greatest scam in history' claims founder of Weather Channel

THE debate about climate change is finished - because it has been categorically proved NOT to exist, one of the world's best known climate change skeptic has claimed.

By Jason Taylor

PUBLISHED: 04:35, Tue, Jun 9, 2015 | UPDATED: 12:27, Wed, Jun 10, 2015

John Coleman, who co-founded the Weather Channel, shocked academics by insisting the theory of man-made climate change was no longer scientifically credible.

Instead, what 'little evidence' there is for rising global temperatures points to a 'natural phenomenon' within a developing eco-system.

In an open letter attacking the Intergovernmental Panel on Climate Change (IPPC), he wrote: "The ocean is not rising significantly.

"The polar ice is increasing, not melting away. Polar Bears are increasing in number.

"Heat waves have actually diminished, not increased. There is not an uptick in the number or strength of storms (in fact storms are diminishing).

"I have studied this topic seriously for years. It has become a political and environment agenda item, but the science is not valid."

Mr. Coleman said he based many of his views on the findings of the NIPCC, a non-governmental international body of scientists aimed at offering an 'independent second opinion of the evidence reviewed by the IPCC.'

He added: "There is no significant man-made global warming at this time, there has been none in the past and there is no reason to fear any in the future.

"Efforts to prove the theory that carbon dioxide is a significant greenhouse gas and pollutant causing significant warming or weather effects have failed.

"There has been no warming over 18 years."

The IPCC argue their research shows that man-made global warming will lead to extreme weather events becoming more frequent and unpredictable.

US News and World Report noted that many of the world's largest businesses, including Coke, Pepsi, Walmart, Nestle, Mars, Monsanto, Kellogg, General Mills, Microsoft, and IBM, "are now engaged and actively responding to climate science and data."

Mr. Coleman's comments come as President Barack Obama came under fire from "" as federal data revealed The United State's energy-related carbon pollution rose 2.5 per cent despite the President's pledges to decrease it.

President Obama told 120 world leaders at the United Nations climate summit last month that America had done more under his watch in cutting greenhouse gases than any other country.

Despite this, the Energy Information Administration's Monthly Energy Review showed an increase in the use of energy from coal.

World leaders have pledged to keep the global average temperature from rising two degrees Celsius above pre-industrial levels to prevent the worst consequences of climate change.

The US, along with the UK and other developed countries, is expected to pledge further actions on climate change early next year.

Climate expert William Happer, from Princeton University, supported Mr. Coleman's claims.

He added: "No chemical compound in the atmosphere has a worse reputation than CO2, thanks to the single-minded demonization of this natural and essential atmospheric gas by advocates of government control and energy production.

"The incredible list of supposed horrors that increasing carbon dioxide will bring the world is pure belief disguised as science."

The 2010 InterAcademy Council review was launched after the IPCC's hugely embarrassing 2007 benchmark climate change report, which contained exaggerated and false claims that Himalayan glaciers could melt by 2035.

Flesch Reading Ease: 35.5

Source texts on rote learning

Source text 5 (supporting rote learning)

http://newsweekly.com.au/article.php?id=3440

What is the advantage of rote-learning?

by Warren Reed

News Weekly, July 19, 2008

Has Western education gained anything worthwhile from jettisoning rote-learning? Warren Reed offers a cautionary lesson from the timeless East.

For those Australians lucky enough to have friends in their 80s or 90s, especially those with all their faculties, there's a lot to be observed and learnt about how our education system has changed. And not for the better.

My oldest friend is 98 and was born and brought up well away from Australia's big coastal cities. He enrolled at Sydney University in the mid-1920s and, while visiting Canberra in 1927 to play rugby against Duntroon Military College, attended the opening of the old Parliament House.

He's a highly articulate person with a memory that would put an elephant to shame. A Latin and Shakespeare buff, 80 years after his formal education, he can still quote - word-perfect - huge slabs of poetry, speeches and extracts from books and plays. He also remembers and uses techniques he was taught at school for making quick mathematical calculations. It's all very impressive. But while that's not uncommon in older people, it's not something you see too often in younger Australians.

Today, no one seems to be taught how to remember anything. Learning appears to be more for the moment and how you feel: is your urge to create - something, anything - stimulated? Gone are the frameworks that young people need to hang things on.

I recall a stint I had in the law faculty of Tokyo University 35 years ago, when foreign researchers were pretty thin on the ground. In a weekly meeting chaired by the dean (accorded almost divine status in Japan), an irreverent American mused aloud in Japanese about the rigidities of that country's education system. The dean hyperventilated.

"So you think your system has all of the finest attributes," he queried acerbically, "and ours, none?"

You could have heard a pin drop. We all sat tight, especially the American.

"You see," the dean said, "you Westerners might think we Japanese are short on creativity, and, to a degree, you have a point. But in your eagerness to prove an either-or situation - that you're all good and we're bad - you overlook the inherent strengths in our system."

He continued: "True, we're big on rote-learning, but that's not just because we love robotic functions. It's because we know that it's that method that gives young people a structure into which to fit all that they learn. It also gives them a perspective, angles to see things from, even a sense of social and intellectual proportion. That's one attribute."

The American nodded. The explanation was clearly as much a critique of what the Western system lacked.

"And another," the dean went on, "is that, in this *rote* process that you have such a low opinion of, we put great emphasis on studying the classics, which in most cases are based on Chinese historical works. And, as you know, they're steeped in wisdom and strategy."

He cast an avuncular glance at the American, seeking acknowledgement of the point he had made.

Everybody nodded. It was the sort of deference that the dean commanded when he felt moved to elucidate something so rudimentary.

"What's that expression you have in English?" he asked, as though conversing with the picture of a crusty old *Meiji* professor on the wall. "Yes, 'method in madness'. I've always liked that turn of phrase. Perhaps that's what describes our approach best of all."

The Japanese language is exquisitely designed for sarcasm and I never fully appreciated what the British meant by "brutal subtlety" until I studied it.

"Our system might not be as conducive to creative thinking as it should be," the dean added, "but, if there's one thing it does do, it teaches students how to discipline their minds and order their thoughts."

He was right, not only in his context but in ours as well.

In the space of just a few generations Australians have moved from one end of the learning spectrum, where we actually shared a lot with the Japanese, to the other. What we seem to be doing in this country is equipping young people with handfuls of flesh to stick on a human model but failing to give them a skeleton to begin with.

By any measure, that's madness in method.

Who's to say who's right and who's wrong? The challenge is to strike an appropriate balance, one that provides Australians with the skills they need to survive in a world dominated by giants like China and India. Whether we know it or not, we're already engaged in a battle of wits and wills for the destiny we believe we're entitled to have. Education is vital to that.

Flesch Reading Ease: 59.6

Source text 6 (opposing rote learning)

http://www.npr.org/2010/12/29/132416889/chinese-top-in-tests-but-still-have-lots-to-learn

Chinese Top In Tests, But Educators Call For Reform

Rob Gifford December 29, 2010

This year, for the first time, schools from China took part in international standardized tests, which provide an interesting if imperfect picture of which countries' students are doing best in reading, writing and math.

And in their inaugural outing, Chinese students came out on top in the test, known as the Program for International Student Assessment, or PISA.

Some educators are calling it "a Sputnik moment," like the launch of the Soviet satellite in 1957 that so shocked America. But the Chinese are not gloating about their success: They realize their educational system — which stresses memorization and largely ignores critical thinking — is in need of reform.

Chinese academic Zhang Minxuan is a happy man. The jovial administrator has just learned that the Shanghai school system he supervises has topped the global PISA tests.

"All Chinese people, no matter poor or rich, they have very high expectations in education. That kind of culture pushes people to study and study and study. I think this is very important," Zhang says.

Limitations of The System

At the Zhabei No. 8 Middle School in the northern part of Shanghai, it's business as usual.

The teacher teaches, the students repeat, and even the principal admits the feared final high school exam that gets you into college — known as the *gaokao* — is all simply about memorization and rote learning. That principal, Liu Jinghai, though he is proud of his students for testing well, says the West shouldn't worry about the PISA results.

"Developed countries like the U.S. shouldn't be too surprised by these results. They're just one index, one measure that shows off the good points of Shanghai's and China's education system. But the results can't cover up our problems," he says.

Liu is very frank about those problems — the continuing reliance on rote learning, the lack of analysis or critical thinking — and he says the system is in dire need of reform.

"Why don't Chinese students dare to think? Because we insist on telling them everything. We're not getting our kids to go and find things out for themselves," he says.

As well as the limitations of the Chinese education system, Liu says, it was only students in Shanghai who took the PISA tests, and Shanghai has some of the best schools in China.

Zhang Chi, 17, was one of those students, and she noticed the difference in the way the PISA questions were framed. "I can't go straight to answer the questions. I must think a while for the question, and give me some time to think," she says.

The Root of The Problem

"Having some time to think" is not the norm in Chinese high schools. Zhang thinks Chinese students would like a little more of it.

"I think we can mix it together, use the Chinese ways of answering the questions and the foreign ways. Combining this together, I think, will be better," she says.

The trouble is that despite all the talk of educational reform, combining East and West, Chinese and foreign, is, in the end, simply not possible. However well she did in the PISA test, or however much she liked the questions, Zhang has to sit down next summer and take the high school university entrance test — the *gaokao* — where writing different, creative answers gets you nowhere, and writing the standard answer that you've memorized gets you into a good university.

Lucia Pierce is an educational consultant in Shanghai. She says the gaokao is the problem.

"As long as the *gaokao* scores are what get you, a student, into college — and those are the scores that also rank the high schools — parents and principals and teachers can't afford to really experiment with a kind of learning that encourages independent thinking, and perhaps, learning from mistakes," she says.

Pierce and others say that's why the recent PISA results are not the Sputnik moment some have talked of. It will take major reform of China's educational system before that happens, she says. And that is not happening anytime soon.

Flesch Reading Ease: 59.8

Source text 7 (supporting rote learning)

http://hechingered.org/content/rote-memorization-overrated-or-underrated_3351/

Rote memorization: Overrated, or underrated?

By Justin Snider February 1, 2011

Among the countless catchphrases that educators generally despise are "drill-'n-kill" and "rote memorization." In keeping with their meanings, both sound terrifically unpleasant. To learn something "by rote," according to the Random House dictionary, is to learn it "from memory, without thought of the meaning; in a mechanical way."

The fear is that we're turning our children into automatons by force-feeding them useless bits of information — facts that can be found instantly on Wikipedia, like the dates of the Thirty Years' War (1618-1648).

But is it possible that memorizing things is actually underrated in modern American society? Could one make a convincing case that it's not just useful but vital for people of all ages to memorize things?

The answer to both of these questions, I believe, is yes. Because "rote" learning and "memorization" have negative connotations for most people, it might be better to speak of learning things by heart. And, as Willingham points out in our discussion, learning things by heart is something children automatically do. That is, it comes naturally to them — whether it's being able to recall all the words to a nursery rhyme or knowing the plot of a story before one is actually able to read. Willingham says that the key is engagement: "If you're really engaged, memory comes pretty automatically."

Learning things by heart can be useful for any number of reasons. As an English teacher, I've often made my students memorize poetry — and just as often some have pushed back, accusing me of assigning meaningless "busy work." I love that accusation because it provides me the perfect opportunity to explain why memorizing a poem is, in fact, a worthwhile activity.

Anyway, here are some of the reasons I give skeptical students for why learning things by heart is worthwhile:

First, it's a challenge, and one in which those who succeed can take pride. (On this front, I've always been much more impressed by Broadway actors than their Hollywood counterparts because the former can't screw up — they have to nail everything the first time — and because they don't get cue cards off-camera to prompt them. Hollywood actors, by contrast, can get away with memorizing just a handful of lines and often re-shoot a single scene scores of times to get it right.)

Second, it's good exercise for your brain. Many people these days seem to believe that our digital devices will remember everything for us — and they will, but they're not much help when we can't find them, or they're broken, or they've been left at home. How will you call your best friend to reschedule that lunch appointment — you don't even know her phone number! *And she's your best friend?*

Third, and most importantly, new insights are gained in the process of memorization. You see things to which you were previously blind; you uncover a play on words, assonance, alliteration, analogies.

It is for this reason, I believe, that the great Russian-American novelist Vladimir Nabokov declared that there's actually no such thing as reading — there's only re-reading. ("Curiously enough, one cannot *read* a book: one can only reread it. A good reader, a major reader, an active and creative reader is a rereader," Nabokov wrote in his *Lectures on Literature*.)

It's only with multiple readings, viewings and hearings, then, that we actually begin to understand, see and hear. We're deaf and blind in our first encounters with things.

Why are rote repetition and memorization underrated in America? As I say on the radio show, they've gotten a bad rap in part because they lend themselves too well to standardized testing. It's much easier — faster, cheaper — for me to determine whether you know when the Japanese bombed Pearl Harbor (December 7, 1941) than whether you can convincingly explain how and why the Treaty of Versailles set the stage for World War II. Yes, the curriculum has narrowed (even Arne Duncan <u>admits it</u>!), the "what-gets-tested-is-what-gets-taught" phenomenon is very much alive, and there's a lack of critical-thinking skills among today's young people.

These sad facts, however, are more the result of our over-reliance on multiple-choice tests than anything inherently evil about repetition or memorization.

Flesch Reading Ease: 49.6

Source text 8 (opposing rote learning)

http://chinawatch.washingtonpost.com/2011/02/besides_rote_learning_add_values_in_childs_educati on/

Besides rote learning, add values in child's education

By Li Xing | Published February 25, 2011

The heated debate over whether Chinese or Western mothers are superior has spread far and wide around the world. Amy Chua, the Yale law professor who initiated the discussion, had received some 7,722 comments on the Wall Street Journal Web site along by Feb 7.

However, the debate mostly focuses on what to do to ensure children excel in academic studies or future career development. An essential point is missing: How to bring up our children so they will become conscientious citizens who value teamwork, creativity, individuality and independence.

With her book and essay, Amy Chua enhances the conviction of many Chinese, as well as Western parents and educators, who believe strict rules and rote learning along with "humiliation", are the prerequisites for academic and professional excellence.

When I raised the question — in my China Daily column published on Jan. 28 — whether rote learning is conducive to nurturing creativity in children, one reader responded by arguing that rote learning for young children is a must.

Under the online name huaqiqiao, he wrote: "Children and young people have fantastic memories, and that's the time to build their basic skills...

"Concentrating on 'creativity' at that age is a waste of time, many 'creative' youngsters in the West, are unemployed. Einstein himself was not schooled in the 'modern' manner, but in traditional Old Europe gymnasia and universities, that all stressed rote learning and drill-and-practice."

For an example of "humiliation," Chua writes of how she could threaten to starve her younger daughter when she couldn't play some tunes. But I don't believe excessive rote learning along with such humiliations should be established as a role model for parents to imitate.

In China, we've heard plenty of stories of children who are asked to write one Chinese character 100 or more times after they have made an error. We've also read quite a number of media reports describing how these harsh methods have resulted in the sufferings and even suicides of children. The suicide rate among young Asian Americans is higher than the United States' average.

While Chua and a lot of Chinese parents show off their children's achievements, we should also recall stories of ancient Chinese mothers who taught a broader range of values in their children.

For example, the mother of Mencius, a great ancient Chinese scholar thought to have lived between 372 - 289 B.C., moved their home three times to make sure that her son grew up in a neighborhood that respected scholarly teachings. She cut pieces of cloth she'd just woven to show Mencius that his lack of perseverance in his studies would only result in failures like the torn pieces of cloth.

The mother of Kou Zhun (961-1023) taught Kou to read and write while supporting the family by weaving. She left a painting with the family servant before she died. When Kou became prime minister and planned to throw a lavish party to celebrate his birthday, the servant opened the painting, in which Kou's mother preached frugality and prudence.

We must reflect on whether our conventional education methods, from rote learning and shaming, to the over-emphasis on individual performance, have affected Chinese children's overall development.

Education should not only be about academic success and future careers; it should also be nurturing innovation, responsibility, teamwork, perseverance and independence. But these are not discussed in either Chua's book or in many of the commentaries.

In fact, many educators now fear that our children's upbringing is distorted. Leading educator Sun Yunxiao cited a test in which two plates of chocolates along with a bell were placed before 100 Chinese and 100 Australian 5-year olds. The children were told that they could get the plate with fewer chocolates if they immediately rang the bell, but they could get the plate with more chocolates if they chose to wait 15 minutes.

At the end of the test, 80 percent of the Chinese children had grabbed the smaller number of chocolates, while 66 percent of the Australian children waited for 15 minutes for the larger share. According to Sun, the Chinese children not only failed to demonstrate self-discipline and patience, they also lacked responsibility and perseverance.

Chinese scholars have also cited the fact that although Chinese students have won numerous international contests in mathematics, they have not yet scored high in international contests for sciences and engineering. None of the scientific and technological breakthroughs in the 20th century were Chinese.

There is no single education method that applies to children of all races and all countries. So it is time to stop arguing about whose mothers are superior, and explore a variety of methods from both the East and West that foster responsible and innovative citizenship.

Flesch Reading Ease: 43.1

2 Supplementary Figures and Tables

2.1 Supplementary Figures



Supplementary Figure 1.

Figure 4.1. A new model of reading-to write tasks

2.2 Supplementary Tables

Supplementary Table 1

Table 2.1 The participants in this study

Topic Group	Number of participants	Gend	er
		Female	Male
Global warming	18	11	7
Rote learning	18	12	6
Total	36	23	13

Sub-group	Number of ST	ST combination	ST stance	
1	2	ST1+ST3	similar ^a (positive ^c)	
2	2	ST2+ST4	similar ^a (negative ^d)	
3	2	ST1+ST4	conflicting ^b	
Notes.	a. similar = bo	oth source texts adopt s	imilar view	
	b. conflicting	= the two source texts	adopt opposite views	
	c. positive $=$ t	he source text adopts a	positive view on the top	oic under
	discussion			
	d. negative $=$	the source text adopts a	a negative view on the to	pic under
	discussion			

Table 2.2 Sub-groups and source text (ST) distribution

Supplementary Table 3

Table 2.3Task procedures

Day	Time	Task
Day1	5 mins	Reading instructions
		Giving original
	95 mins	positions
	10-15 mins (for each	Reading and writing
	interviewee)	A retrospective
		interview
Day 2-Day 3		A reflective journal

Supplementary Table 4

Table 3.1The main phases of a response essay writing

Phases	Sub-stages	Functions
Pre-reading	Brainstorming	Preparing for the
	Initial view decision	reading and writing
	Initial planning	task
	Predicting	
Reading for writing	1 st reading	Reading source texts
	Rereading	Preparing for the
	(analytic reading)	writing task
	Planning for writing	
Writing from	Planning/Outlining	Writing a response
reading	Drafting	essay
	Revising (editing,	
	rereading)	

Sub-stages	Examples
Brainstorming	I actually often hear some pieces of news about
	global warming by the geographic books or the
	CCTV [China Central Television] news report I
	just knew that global warming will bring the higher
	temperature and the death of fish and people.
Initial view	根据自己对背诵学习的态度确立自己文章的观点
decision	的,在读文章之前觉得背诵是有益处的。[1
	selected my viewpoint based on my attitude towards
	rote-learning. I believed in its benefits before
	reading the pieces.]
Initial planning	阅读前,想着先写introduction,然后明确观
	点,然后反驳一下。没有考虑具体内容,但是有
	个大概的框架。[I was thinking to write the
	introduction before reading. Then I would give my
	position. Finally, I should refute some
	counterarguments. Not much about the specific
	content, simply a general framework.]
Predicting	那个文章,我读之前我猜测它应该是批判【背诵
	学习】的,我读的时候要去找出它批判的漏洞。
	[I guessed the readings might criticize rote. So I
	should find out holes of its criticism.]

Table 3.2The sub-stages of pre-reading

Sub-stages	Examples
1 st reading	我整体地读了两遍文章,第一遍泛读第二
	遍细读第一遍追求大致理解文
	意[I read the articles twice, the first
	time scanning, and the second careful
	readingthe first reading for general
	comprehension]
Re-reading	第二遍弄懂个别词句,同时开始寻求作者
	所论述的事物以及作者的这个论述的过程
	有没有什么破绽足以让我从反面立论。[1
	tried to understand new words and difficult
	lines during rereading, and meanwhile,
	looking for the major arguments and
	whether there were holes in his arguments
<i></i>	so that I could establish an opposite view.]
(Analytic reading)	虽然在阅读文章的过程中产生了一些犹豫
	和动摇,但是在分析思考后,我还是认为一
	直以来受到的教育方式本质上是对学习有
	很大助益的,其中有一篇文章对背诵
	学习持反对态度,初看起来颇有说服力,让
	我对于自己的立场和观点产生了一些动
	摇,之后细加思考,认为篇章中一些说法是
	对背诵学习的曲解,最后坚持了立场
	也有分析作者和自己想法的异同之处。
	[Although I hesitated about my viewpoint
	when reading, I believed that [rote]
	education essentially facilitated
	learning, one passage objected to rote
	learning, which seemed reasonable and
	therefore shook my original position.
	Afterwards, I carefully thought about it and
	believed some ideas distorted rote learning.
	I chose to insist on my position I also
	analyzed the similarities and differences
DI '	between the author's view and mine.
Planning	during the process of reading, I built the
	structure of my article at the same time.

Table 3.3The sub-stages of Reading for writing process

1abit 3. 4 1 lit	number of parties	pants engageu m a	narytical reading	
Group	G1	G2	G3	
Rote learning	3	6	5	
Global warming	2	5	6	
Total	5	11	11	

Table 3.4The number of participants engaged in analytical reading

Supplementary Table 8

Table 3.5	The sub-stages	of writing f	from reading	process

Sub-stages		Examples
Planning/outlin	ning	写作前,写了个提纲,中文的,想到可以
		用的都写下来。[Before writing the essay, I
		produced an outline in Chinese, putting
		down everything that might be useful.]
Drafting	Rereading	I definitely referred to the passages when I
		wrote my article. I had to list evidence to
		prove the phenomenon of global warming
		does exist. When I talked about how people
Revising	Editing	face to this, I also referred to the passages. 合成うら又放水、 之面見海言放水、 白コ
	28	元 <i>队之旧入修议,土安定宿言修议,日口</i>
		改的,不是有批改网建议。[When
		finished, I did some editing, mainly
	Revising	language ealting on my own, not referring to the suggestions on Piggi org 1
		With article finished I tried to polish my
		expressions and add more practical
	Rereading	examples about celebrities who experienced
		rote-learning.
		After finishing the whole article, I rethought
		the logic of my opinions, and read the two
		articles again, I found that creativity is not
		in fact what I was talking about, thinking is.
		Therefore, I returned to the article and read
		them two again.

Groups	Pre-reading	Reading for	Writing from
		writing	Teaunig
Rote learning	9	17	11
Global	6	14	15
warming			
Total	15	31	26

 Table 4.1 The number of writers planning in different phases

Supplementary Table 10

Table 4.2 The purpose of planning in each phase

Phases	Purposes
Pre-reading	A general writing plan
Reading for writing	Idea collection and development
Writing from reading	Outlining; idea organization and
	adjustment