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## Why Are Finland's Schools Successful?

**V** **D** **Vizle** Kirkojarvi Comprehensive School in Espoo, a suburb west of Helsinki, Kari Louhivuori, the principal, decided to try something extreme by Finnish standards. One of his sixth-grade students, a recent immigrant, was falling behind, resisting his teacher's best efforts. So he decided to let the boy back a year. Standards in the country have vastly improved in reading, math and science literacy over the past decade, in large part because its teachers are trusted to do whatever it takes to turn young lives around. 'I took Besart on that year as my private student,' explains Louhivuori. When he was not studying science, geography and math, Besart was seated next to Louhivuori's desk, taking books from a tall stack, slowly reading one, then another, then devouring them by the dozens. By the end of the year, he had conquered his adopted country's vowel-rich language and arrived at the realization that he could, in fact, learn.

**B.** This tale of a single rescued child hints at some of the reasons for Finland's amazing record of education success. The transformation of its education system began some 40 years ago but teachers had little idea it had been so successful until 2000. In this year, the first results from the Programme for International Student Assessment (PISA), a standardized test given to 15-year-olds in more than 40 global venues, revealed Finnish youth to be the best at reading in the world. Three years later, they led in math. By 2006, Finland was first out of the 57 nations that participate in science. In the latest PISA scores, the nation came second in science, third in reading and sixth in math among nearly half a million students worldwide.

**C.** In the United States, government officials have attempted to improve standards by introducing marketplace competition into public schools. In recent years, a group of Wall Street financiers and philanthropists such as Bill Gates have put money behind private-sector ideas, such as charter schools, which have doubled in number in the past decade. President Obama, too, apparently thought competition was the answer. One policy invited states to compete for federal dollars using tests and other methods to measure teachers, a philosophy that would not be welcome in Finland. 'I think, in fact, teachers would tear off their shirts,' said Timo Heikkinen, a Helsinki principal with 24 years of teaching experience. 'If you only measure the statistics, you miss the human aspect.'

**D.** There are no compulsory standardized tests in Finland, apart from one exam at the end of students' senior year in high school. There is no competition between students, schools or regions. Finland's schools are publicly funded. The people in the government agencies running them, from national officials to local authorities, are educators rather than business people or politicians. Every school has the same national goals and draws from the same pool of university-trained educators. The result is that a Finnish child has a good chance of getting the same quality education no matter whether he or she lives in a rural village or a university town.

**E.** It's almost unheard of for a child to show up hungry to school. Finland provides three years of maternity leave and subsidized day care to parents, and preschool for all five-year-olds, where the emphasis is on socializing. In addition, the state subsidizes parents, paying them around 150 euros per month for every child until he or she turns 17. Schools provide food, counseling and taxi service if needed. Health care is even free for students taking degree courses.

**F.** Finland's schools are a wonder. For the first half of the twentieth century, only the privileged got a quality education. But in 1963, the Finnish Parliament made the bold decision to choose public education as the best means of driving the economy forward and out of recession. Public schools were organized into one system of comprehensive schools for ages 7 through 16. Teachers from all over the nation contributed to a national curriculum that provided guidelines, not prescriptions, for them to refer to. Besides Finnish and Swedish (the country's second official language), children started learning a third language (English is a favorite) usually beginning at age nine. The equal distribution of equipment was next, meaning that all teachers had their fair share of teaching resources to aid learning. As the comprehensive schools improved, so did the upper secondary schools (grades 10 through 12). The second critical decision came in 1979, when it was required that every teacher gain a fifth-year Master's degree in theory and practice, paid for by the state. From then on, teachers were effectively granted equal status with doctors and lawyers. Applicants began flooding teaching programs, not because the salaries were so high but because autonomous decision-making and respect made the job desirable. And as Louhivuori explains, 'We have our own motivation to succeed because we love the work.'

Questions 7-13 Complete the notes below.

05:48

Choose NO MORE THAN TWO WORDS AND/OR A NUMBER from the passage for each answer.

### The school system in Finland

#### PISA tests

=> In the most recent tests, Finland's top subject was (7) \_\_\_\_\_.

#### History

##### 1963:

- => A new school system was needed to improve Finland's (8) \_\_\_\_\_.
- => Schools followed (9) \_\_\_\_\_ that were created partly by teachers.
- => Young pupils had to study an additional (10) \_\_\_\_\_.
- => All teachers were given the same (11) \_\_\_\_\_ to use.

##### 1979:

- => Teachers had to get a (12) \_\_\_\_\_ but they did not have to pay for this.
- => Applicants were attracted to the (13) \_\_\_\_\_ that teaching received.



## Australia's Lost Giants

**V** **D** **Vizle** 1969, a fossil hunter named Rod Wells came to Naracoorte in South Australia to explore what is known as Victoria Cave. Wells clawed through narrow passages, and eventually into a huge chamber. Its floor of red soil was littered with strange objects. It took Wells a moment to realize what he was looking at; the bones of thousands of creatures that must have fallen through holes in the ground and become trapped. Some of the oldest belonged to mammals far larger than any found today in Australia. They were the ancient Australian megafauna- huge animals of the Pleistocene epoch. In boneyards across the continent, scientists have found the fossils of a giant snake, a huge flightless bird, and a seven foot kangaroo, to name but a few. Given how much ink has been spilled on the extinction of the dinosaurs, it's a wonder that even more hasn't been devoted to megafauna. Prehistoric humans never threw spears at Tyrannosaurus rex but really did hunt mammoths and mastodons.

**B.** The disappearance of megafauna in America - mammoths, saber-toothed cats, giant sloths, among others- happened relatively soon after the arrival of human beings, about 13,000 years ago. In the 1960s, paleoecologist Paul Martin developed what became known as the blitzkrieg hypothesis. Modern humans, Martin said, created havoc as they spread through the Americas, wielding spears to annihilate animals that had never faced a technological predator. But this period of extinction wasn't comprehensive. North America kept its deer, black bears and a small type of bison, and South America its jaguars and llamas.

**C.** What happened to Australia's large animals is baffling. For years scientists blamed the extinctions on climate change. Indeed, Australia has been drying out for over a million years, and the megafauna were faced with a continent where vegetation began to disappear. Australian paleontologist Tim Flannery suggests that people, who arrived on the continent around 50,000 years ago, used fire to hunt, which led to deforestation. Here's what's certain, Flannery says. Something dramatic happened to Australia's dominant land creatures- somewhere around 46,000 years ago, strikingly soon after the invasion of a tool-wielding, highly intelligent predator.

In Flannery's 1994 book called *The Future Eaters*, he sets out his thesis that human beings are a new kind of animal on the planet, and are in general, one prone to ruining ecosystems. Flannery's book proved highly controversial. Some viewed it as critical of the Aborigines, who pride themselves on living in harmony with nature. The more basic problem with Flannery's thesis is that there is no direct evidence that they killed any Australian megafauna. It would be helpful if someone uncovered a Diprotodon skeleton with a spear point embedded in a rib - or perhaps Thylacoleo bones next to the charcoal of a human campfire. Such kill sites have been found in the Americas but in Australia.

**D.** The debate about megafauna pivots to a great degree on the techniques for dating old bones and the sediments in which they are buried. If scientists can show that the megafauna died out fairly quickly and that this extinction event happened within a few hundred, or even a couple thousand years, of the arrival of people, that's a strong case - even if a purely circumstantial one - that the one thing was the direct result of the other. As it happens, there is one place where there may be such evidence: Cuddie Springs in New South Wales. Today the person most vocal about the site is archeologist Judith Field. In 1991, she discovered megafauna bones directly adjacent to stone tools - a headline-making find. She says there are two layers showing the association, one about 30,000 years old, the other 35,000 years old. If that dating is accurate, it would mean humans and megafauna coexisted in Australia for something like 20,000 years. "What Cuddie Springs demonstrates is that you have an extended overlap of humans and megafauna," Field says. Nonsense, say her critics. They say the fossils have been moved from their

original resting places and deposited in younger sediments.

**E.** Another famous boneyard in the same region is a place called Wellington Caves, where Diprotodon, the largest known marsupial\*, was first discovered. Scientists Mike Augee says that: "This is a sacred site in Australian paleontology." Here's why: In 1830 a local official named George Rankin lowered himself into the cave on a rope tied to a protrusion in the cave wall. The protrusion turned out to be a bone. A surveyor named Thomas Mitchell arrived later that year, explored the caves in the area, and shipped fossils off to Richard Owen, the British paleontologist who later gained fame for revealing the existence of dinosaurs. Owen recognized that the Wellington cave bones belonged to an extinct marsupial. Later, between 1909 and 1915 sediments in Mammoth Cave that contained fossils were hauled out and examined in a chaotic manner that no scientist today would approve. Still, one bone in particular has drawn extensive attention: a femur with a cut in it, possibly left there by a sharp tool.

**F.** Unfortunately, the Earth preserves its history haphazardly. Bones disintegrate, the land erodes, the climate changes, forests come and go, rivers change their course- and history, if not destroyed, is steadily concealed. By necessity, narratives are constructed from limited data. Australia's first people expressed themselves in rock art. Paleontologist Peter Murray has studied a rock painting in far northern Australia that shows what looks very much like a megafauna marsupial known as Palorchestes. In Western Australia another site shows what appears to be hunter with either a marsupial lion or a Tasmanian tiger - a major distinction, since the marsupial lion went extinct and the much smaller Tasmanian tiger survived into the more recent historical era. But as Murray says, "Every step of the way involves interpretation. The data doesn't just speak for itself."

Questions 19 and 20 Choose TWO letters, A-E.

Which TWO of these possible reasons for Australian megafauna extinction are mentioned in the text?

11:24

- A. human activity
- B. disease
- C. loss of habitat
- D. a drop in temperature
- E. the introduction of new animal species

Questions 21 and 22 Choose TWO letters, A-E.

Which TWO possible forms of proof does the writer say have been found in Australia?

- A. bone injury caused by a man-made object
- B. bones near to early types of weapon
- C. man-made holes designed for trapping animals
- D. preserved images of megafauna species
- E. animal remains at camp fires



**V**inating tale about creativity, look at a cleaning product called the Swiffer and how it came to market, writes author Jonah Lehrer. In the story of the Swiffer, he argues, we have the key elements of a breakthrough idea: frustration, moments of insight and sheer hard work. The story starts with a multinational company which had invented products for keeping homes spotless, and couldn't come up with better ways to clean floors, so it hired designers to watch how people cleaned. Frustrated after hundreds of hours of observation, they one day noticed a woman do with a paper towel what people do all the time: wipe something up and throw it away. An idea popped into lead designer Harry West's head: the solution to their problem was a floor mop with a disposable cleaning surface. Mountains of prototypes and years of teamwork later, they unveiled the Swiffer, which quickly became a commercial success.

Lehrer, the author of *Imagine*, a new book that seeks to explain how creativity works, says this study of the imagination started from a desire to understand what happens in the brain at the moment of sudden insight. 'But the book definitely spiraled out of control,' Lehrer says. 'When you talk to creative people, they'll tell you about the "eureka" moment, but when you press them they also talk about the hard work that comes afterwards, so I realised I needed to write about that, too. And then I realised I couldn't just look at creativity from the perspective of the brain, because it's also about the culture and context, about the group and the team and the way we collaborate.'

When it comes to the mysterious process by which inspiration comes into your head as if from nowhere, Lehrer says modern neuroscience has produced a 'first draft' explanation of what is happening in the brain. He writes of how burnt-out American singer Bob Dylan decided to walk away from his musical career in 1965 and escape to a cabin in the woods, only to be overcome by a desire to write. Apparently 'Like a Rolling Stone' suddenly flowed from his pen. 'It's like a ghost is writing a song,' Dylan has reportedly said. 'It gives you the song and it goes away.' But it's no ghost, according to Lehrer.

Instead, the right hemisphere of the brain is assembling connections between past influences and making something entirely new. Neuroscientists have roughly charted this process by mapping the brains of people doing word puzzles solved by making sense of remotely connecting information. For instance, subjects are given three words—such as 'age', 'mile' and 'sand'—and asked to come up with a single word that can precede or follow each of them to form a compound word. (It happens to be 'stone'.) Using brain-imaging equipment, researchers discovered that when people get the answer in an apparent flash of insight, a small fold of tissue called the anterior superior temporal gyrus suddenly lights up just beforehand. This stays silent when the word puzzle is solved through careful analysis. Lehrer says that this area of the brain lights up only after we've hit the wall on a problem. Then the brain starts hunting through the 'filing cabinets of the right hemisphere' to make the connections that produce the right answer.

Studies have demonstrated it's possible to predict a moment of insight up to eight seconds before it arrives. The predictive signal is a steady rhythm of alpha waves emanating from the brain's right hemisphere, which are closely associated with relaxing activities. 'When our minds are at ease—when those alpha waves are rippling through the brain—we're more likely to direct the spotlight of

attention towards that stream of remote associations emanating from the right hemisphere,' Lehrer writes. 'In contrast, when we are diligently focused, our attention tends to be towards the details of the problems we are trying to solve.' In other words, then we are less likely to make those vital associations. So, heading out for a walk or lying down are important phases of the creative process, and smart companies know this. Some now have a policy of encouraging staff to take time out during the day and spend time on things that at first glance are unproductive (like playing a PC game), but day-dreaming has been shown to be positively correlated with problem-solving. However, to be more imaginative, says Lehrer, it's also crucial to collaborate with people from a wide range of backgrounds because if colleagues are too socially intimate, creativity is stifled.

Creativity, it seems, thrives on serendipity. American entrepreneur Steve Jobs believed so. Lehrer describes how at Pixar Animation, Jobs designed the entire workplace to maximise the chance of strangers bumping into each other, striking up conversations and learning from one another. He also points to a study of 766 business graduates who had gone on to own their own companies. Those with the greatest diversity of acquaintances enjoyed far more success. Lehrer says he has taken all this on board, and despite his inherent shyness, when he's sitting next to strangers on a plane or at a conference, forces himself to initiate conversations. As for predictions that the rise of the internet would make the need for shared working space obsolete, Lehrer says research shows the opposite has occurred; when people meet face-to-face, the level of creativity increases. This is why the kind of place we live in is so important to innovation. According to theoretical physicist Geoffrey West, when corporate institutions get bigger, they often become less receptive to change. Cities, however, allow our ingenuity to grow by pulling huge numbers of different people together, who then exchange ideas. Working from the comfort of our homes may be convenient, therefore, but it seems we need the company of others to achieve our finest 'eureka' moments.

Questions 27-30 Choose the correct letter, A, B, C or D.

29. Lehrer refers to the singer Bob Dylan in order to
- illustrate how ideas seem spontaneous.
  - exemplify ways in which we might limit our inventiveness.
  - contrast different approaches to stimulating the imagination.
  - propose particular approaches to regaining lost creativity.
30. What did neuroscientists discover from the word puzzle experiment?
- Memories are easier to retrieve when they are more meaningful.
  - An analytical approach to problem-solving is not necessarily effective.
  - One part of the brain only becomes active when a connection is made suddenly.
  - Creative people tend to take a more instinctive approach to so language problems.

17:00



## The Swiffer

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Questions 35-39 Complete the notes below. Choose ONE WORD ONLY from the passage

How other people influence our creativity

=> Steve Jobs

— made changes to the (35) \_\_\_\_\_ encourage interaction at Pixar.

=> Lehrer

— company owners must have a wide range of (36) \_\_\_\_\_ to do well.

— it's important to start (37) \_\_\_\_\_ with new people

— the (38) \_\_\_\_\_ has not replaced the need for physical contact.

=> Geoffrey West

— living in (39) \_\_\_\_\_ encourages creativity.

Question 40 Choose the correct letter, A, B, C or D.

40. Which of the following is the most suitable title for Reading Passage 3?

- Understanding what drives our moments of inspiration
- Challenging traditional theories of human creativity
- Creative solutions for enhancing professional relationships
- How the future is shaped by innovative ideas and inspired people

02:36



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