

系別：資訊管理學系碩士班 甲組(一般生) 科目：管理資訊系統 共 4 頁 第 1 頁
資訊管理學系碩士班 乙組(一般生)

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*請在試卷答案卷(卡)內作答

注意事項：

本試題共有 3 部份，請依照題號順序在答題紙上作答。

第 1 部份：解釋下列名詞並舉例說明其對組織資訊科技應用或是資訊系統管理的影響。
(每題 6 分，共計 30 分)

- (A) IFRS
- (B) ISMS
- (C) Metcalfe's law
- (D) VPN
- (E) Value chain

參考用

第 2 部份：簡答題 (每題 10 分，共計 20 分)

- (1) What are the proper performance measurements for organizations' web or EB initiatives? Use examples to illustrate the importance of these measurements. (10 分)
- (2) What is BI? Use examples to demonstrate what information are often useful on dash-board for managers in competitive business environment. (10 分)

第 3 部份：思考分析題 (共計 50 分)

- (1) 請閱讀下面 2 篇文章，用中文寫出各篇文章重點。(20%)
- (2) 請綜合思考分析這 2 篇論點，提出你對資訊管理教育的學術性意見。(30%)

第一篇文章：“Your brain on Google: patterns of cerebral activation during internet searching,” Am J Geriatr Psychiatry. 2009 Feb;17(2):116-26. (By Small GW, Moody TD, Siddarth P, and Bookheimer SY)

Abstract

OBJECTIVE: Previous research suggests that engaging in mentally stimulating tasks may improve brain health and cognitive abilities. Using computer search engines to find information on the Internet has become a frequent daily activity of people at any age, including middle-aged and older adults. As a preliminary means of exploring the possible influence of Internet experience on brain activation patterns, the authors performed functional magnetic resonance imaging (MRI) of the brain in older persons during search engine use and explored whether prior search engine experience was associated with the pattern of brain activation during Internet use.

DESIGN: Cross-sectional, exploratory observational study

PARTICIPANTS: The authors studied 24 subjects (age, 55-76 years) who were neurologically normal, of whom 12 had minimal Internet search engine experience (Net Naive group) and 12 had more extensive experience (Net Savvy group). The mean age and level of education were similar in the two groups.

注意：背面有試題

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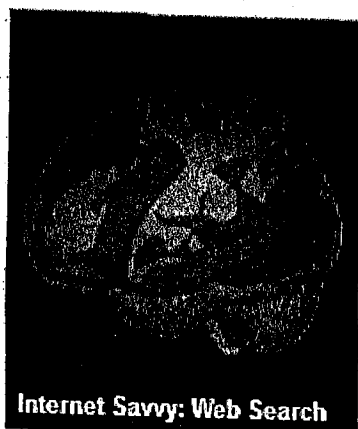
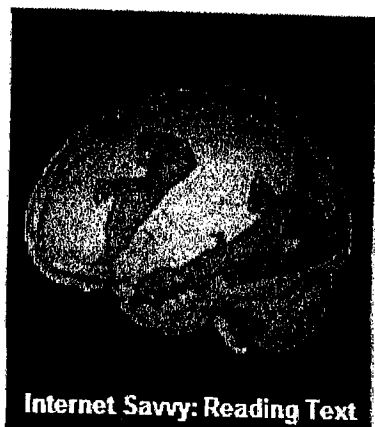
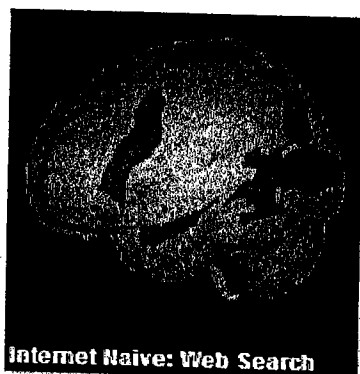
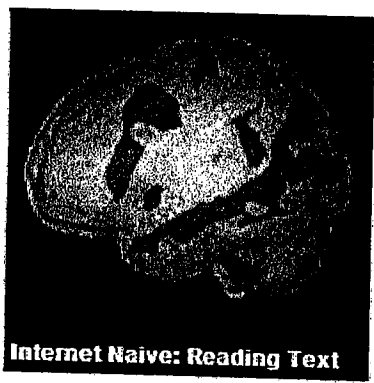
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MEASUREMENTS: Patterns of brain activation during functional MRI scanning were determined while subjects performed a novel Internet search task, or a control task of reading text on a computer screen formatted to simulate the prototypic layout of a printed book, where the content was matched in all respects, in comparison with a nontext control task.

RESULTS: The text reading task activated brain regions controlling language, reading, memory, and visual abilities, including left inferior frontal, temporal, posterior cingulate, parietal, and occipital regions, and both the magnitude and the extent of brain activation were similar in the Net Naive and Net Savvy groups. During the Internet search task, the Net Naive group showed an activation pattern similar to that of their text reading task, whereas the Net Savvy group demonstrated significant increases in signal intensity in additional regions controlling decision making, complex reasoning, and vision, including the frontal pole, anterior temporal region, anterior and posterior cingulate, and hippocampus. Internet searching was associated with a more than twofold increase in the extent of activation in the major regional clusters in the Net Savvy group compared with the Net Naive group (21,782 versus 8,646 total activated voxels).

CONCLUSION: Although the present findings must be interpreted cautiously in light of the exploratory design of this study, they suggest that Internet searching may engage a greater extent of neural circuitry not activated while reading text pages but only in people with prior computer and Internet search experience. These observations suggest that in middle-aged and older adults, prior experience with Internet searching may alter the brain's responsiveness in neural circuits controlling decision making and complex reasoning.



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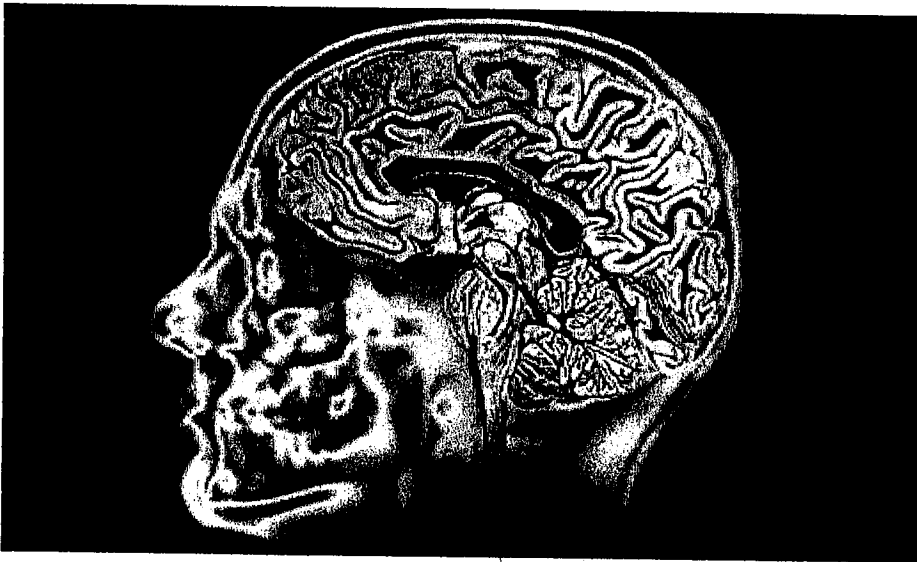
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第二篇文章：Oxford scientist calls for research on technology 'mind change'

Brain researcher Susan Greenfield claims 'mind change' as a result of using modern technology is one of humanity's greatest threats



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Scientists believe it is too early to know whether modern technology's effect on the brain is a cause for concern. Photograph: Science Photo Library

Lady Greenfield reignited the debate over modern technology and its impact on the brain today by claiming the issue could pose the greatest threat to humanity after climate change.

The Oxford University researcher called on the government and private companies to join forces and thoroughly investigate the effects that computer games, the internet and social networking sites such as Twitter may have on the brain.

Lady Greenfield has coined the term "mind change" to describe differences that arise in the brain as a result of spending long periods of time on a computer. Many scientists believe it is too early to know whether these changes are a cause for concern.

"We need to recognise this is an issue rather than sweeping it under the carpet," Greenfield said. "We should acknowledge that it is bringing an unprecedented change in our lives and we have to work out whether it is for good or bad."

Everything we do causes changes in the brain and the things we do a lot are most likely to cause long term changes. What is unclear is how modern technology influences the brain and the consequences this has.

"For me, this is almost as important as climate change," said Greenfield. "Whilst of course it doesn't threaten the existence of the planet like climate change, I think the quality of our existence is threatened and the kind of people we might be in the future."

Lady Greenfield was talking at the British Science Festival in Birmingham before a speech at the Tory party conference next month. She said possible benefits of modern technology included higher IQ and faster processing of information, but using internet search engines to

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國立中央大學100學年度碩士班考試入學試題卷

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find facts may affect people's ability to learn. Computer games in which characters get multiple lives might even foster recklessness, she said.

"We have got to be very careful about what price we are paying, that the things that are being lost don't outweigh the things gained," Greenfield said. "Every single parent I have spoken to so far is concerned. I have yet to find a parent who says 'I am really pleased that my kid is spending so much time in front of the computer'."

Sarah-Jayne Blakemore, a cognitive neuroscientist at University College London and co-author of the book *The Learning Brain*, agreed that more research was needed to know whether technology was causing significant changes in the brain. "We know nothing at all about how the developing brain is being influenced by video games or social networking and so on.

"We can only really know how seriously to take this issue once the research starts to produce data. So far, most of the research on how video games affect the brain has been done with adult participants and, perhaps surprisingly, has mostly shown positive effects of gaming on many cognitive abilities," she said.

Maryanne Wolf, a cognitive neuroscientist at Tufts University in Massachusetts and author of *Proust and the Squid*, said that brain circuits honed by reading books and thinking about their content could be lost as people spend more time on computers.

"It takes time to think deeply about information and we are becoming accustomed to moving on to the next distraction. I worry that the circuits that give us deep reading abilities will atrophy in adults and not be properly formed in the young," she said.

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