IELTS Academic Reading – Passage 3

The Cognitive Architecture of Multitasking

A. Early psychological models described attention as a limited cognitive resource. The "single-channel hypothesis" argued that the human brain can process only one stream of complex information at a time. When individuals attempt to perform two demanding tasks simultaneously, performance deteriorates because attention shifts rapidly rather than operates concurrently.

B. Later theories distinguished between automatic and controlled processes. Automatic processes require minimal conscious attention, while controlled processes demand active cognitive engagement and working memory. Multitasking is more successful when one activity is automatic and the other controlled. When both require conscious attention, interference becomes significant.

C. Neuroscientific research has provided empirical support for these claims. Functional magnetic resonance imaging (fMRI) studies demonstrate that the prefrontal cortex plays a central role in task management and decision-making. When individuals attempt to multitask, this region shows increased activity, suggesting heightened cognitive strain. Experiments reveal measurable delays when participants switch between tasks, known as the "switch cost."

D. Some researchers argue that habitual multitaskers may develop adaptive strategies. Longitudinal studies of adolescents who frequently engage with multiple digital media platforms suggest slight improvements in task-switching speed. However, these improvements do not necessarily translate into deeper comprehension or long-term retention.

E. The educational implications are significant. Studies in university classrooms indicate that students who use laptops for unrelated activities during lectures perform worse on assessments. This negative effect also impacts nearby students, possibly due to visual distraction.

F. Ultimately, evidence suggests multitasking is less about simultaneous processing and more about rapid task switching. While individuals may feel productive, cognitive science indicates that efficiency often declines when attention is divided.

Questions 1–6: Matching Information

Which paragraph (A–F) contains the following information?

1. Evidence from brain-imaging technology
2. A theory suggesting attention has strict limitations
3. The effect of multitasking on people nearby
4. A distinction between different types of mental processes
5. A challenge to the assumption that multitasking improves learning
6. The idea that multitasking may create an illusion of productivity

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Questions 7–10: Matching Features

Match the researchers with the correct statement.
Researchers:
A. Early cognitive theorists
B. Neuroscientists
C. Educational researchers
D. Digital media researchers

Statements:
7. Studied brain activity during task performance
8. Examined long-term exposure to digital environments
9. Investigated attention as a single processing channel
10. Analysed academic consequences in lecture settings

Questions 11–14: Summary Completion

Complete the summary below.
Choose ONE WORD ONLY from the passage for each answer.

Research indicates that multitasking relies heavily on the brain's _____ cortex, which is responsible for executive functions. When two _____ processes are attempted at the same time, interference increases. Although some habitual multitaskers improve their task-switching speed, this does not enhance long-term _____. Overall, multitasking often reduces actual _____, despite perceptions to the contrary.

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