

What is multi-tasking?

Multi-tasking might feel productive, but it can be more dangerous than drink driving and even make you drop IQ points. Multi-tasking is the appearance of being able to handle more than one task at the same time. For decades, humans have grappled with the notion that despite the 100 million neurons in their brains, we actually remain unable to do two things at once. When we talk about multi-tasking, we're really referring to rapidly switching between tasks. A hot topic of psychological research around the world, particularly in the US, the study of multi-tasking is still in its infancy. Many questions remain unanswered and will only be resolved with time. However, research is showing that the way the human brain functions does not allow multi-tasking to deliver longed-for efficiencies.

Is it a myth?

Many scientists believe the ability to multi-task is a myth. In fact, one psychiatrist has gone so far as to describe it as a 'mythical activity in which people believe they can perform two or more tasks simultaneously as effectively as one'. Unlike computers, which can perform tasks at lightning speed, the human brain needs to switch between tasks, depending on which area of the brain is being used. Multi-tasking often involves goal switching and re-evaluating, which experts say takes time. What appears to be human multi-tasking is more akin to channel surfing between television stations.

Ernst Poppel, of the Institute for Medical Psychology at Munich's Ludwig Maximilian University, believes humans cannot perform two or three tasks at once with the same degree of concentration. He says seemingly simultaneous awareness and information processing takes place in three-second windows. The human brain takes in the data about the environment streaming in from the sensory systems; subsequent events are then processed in the next window. For example, humans can concentrate on a conversation for three seconds, then move their focus to a computer screen for three seconds, and then to a crying child three seconds later. While one task is in the foreground of human consciousness, the others remain in the background until it is their turn to be given access to the central processor in the human brain.

How did the notion of multi-tasking start?

The concept came to the fore with the advent of computers, which have central processing units and can proceed rapidly from one task to another. The notion of multi-tasking appeals because it suggests that more can be achieved within a certain amount of time. It is of particular appeal to employers keen to gain efficiencies. However, research shows usually there is little to be gained by humans switching between tasks.

Does multi-tasking save time?

Research has shown, generally, it doesn't. In fact, it can have the opposite effect. It can take longer to do multiple tasks concurrently than if the focus were on completing one task at a time. Dr Julia Irwin, of Macquarie University's Department of Psychology in Sydney, says the problem with multi-tasking is that the amount of attentional capacity humans have is restricted, and it has to be shared among the several tasks being performed.

When flipping between tasks, humans must pause between switching from one part of the brain to another. This is known as a post-refractory pause and uses• precious time. Switching back to the original task takes up more time again.

Research shows it is less time-efficient to switch between tasks, as humans must, than to focus on one task at a time. Multi-taskers can also be left with a reduced ability to perform each task. Research done in 2004 by Marcel Just, Professor of Psychology at Carnegie Mellon University, asked people to listen to a sentence and then say whether it was true or false at the same time as they rotated an object in their hand. It was found that while people were able to perform both tasks at the same time, it took them twice as long as it did if they focused on each task individually, one after the other.

Professor David E. Meyer, a psychology professor at the University of Michigan, has shown how time is lost when humans shuttle between tasks. People were asked to write a report and check their email at the same time. Those who constantly jumped between the tasks took about one and a half times as long to complete the task as those who completed one job before turning to another.

Given our human limitations, can we actually improve our performance at multi-tasking?

You can improve your multi-tasking ability, but only up to a point. For a long time, people have known that training to perform a particular sequence of tasks can reduce the time it takes if those tasks can become routine. This is because rote tasks require fewer mental demands. 'Those tasks that benefit from practice and which we tend to do well when multi-tasking tend to be ones that can be automated with practice and don't require much attention. So, for example, you can run through in your head what you have to do in the coming day while having a shower,' says Dr Julia Irwin. However, just because a person has improved their efficiency performing one set of tasks does not mean they have improved their multi-tasking efficiency generally. Research has shown the time lost when switching between tasks increases with the complexity and unfamiliarity of the tasks.

Source: IELTS advantage

Questions 1-4:

Look at the following statements and the list of people below.

Match each statement with the correct person, A- D.

1. Switching from task to task results in slower performance.
2. Although possible, multi-tasking is time consuming.
3. Multi-tasking works best with undemanding activities.
4. Multi-tasking is in fact the brain focusing on different things for short sequences.

List of People

- A Julia Irwin
- B Ernst Poppel
- C Marcel Just
- D David E. Meyer