

Studies find multitasking inefficient and error prone

Although performing multiple tasks simultaneously is common in our business and personal lives, mounting scientific evidence shows that multitasking may be less efficient, more error prone and less safe than performing tasks one at a time. Attempting to do two or more things at the same time can leave you with reduced brainpower to perform each task and can actually take longer than doing those same tasks individually.

In one study published in the *Journal of Experimental Psychology*, researchers from the Federal Aviation Administration and the University of Michigan found that college students took more time when alternating between two tasks than when performing those same tasks individually.

The researchers concluded that, each time the task changed, the brain needed time to refocus on the new task and to remember the rules that applied to it. The researchers also found that the time to switch between tasks increased as the complexity of the task increased. Furthermore, the subjects tended to make more errors when switching between two tasks.

David Meyer, one of the authors of the study said that some tasks—such as driving a car and talking on a cell phone—can be unsafe when performed simultaneously. The mere half second it takes the brain to switch from talking to driving is long enough for a driver to get into an accident. Meyer also says that multitasking can have a negative effect on health. Chronic high-stress multitasking can lead to short-term memory loss, mental burnout, anxiety and depression.

In another study published in *NeuroImage*, researchers at Carnegie Mellon University found that managing two

mental tasks at once reduces a person's brainpower available for either task. In the experiment, subjects were asked to listen to a person reading, or compare two rotating objects, or perform both tasks simultaneously. During the experiment, researchers used magnetic resonance imaging (MRI) to measure activity in two different parts of the brain.

Researchers found that activity in the part of the brain that processes visual input dropped 29 percent when the person was trying to listen at the same time. Likewise, activity in the part of the brain used for listening dropped 53 percent when the person was also trying to process visual input. Marcel Just, the author of the study said, "It doesn't mean you can't do several things at the same time, but we're kidding ourselves if we think we can do so without cost."

This study has clear implications for those who drive while talking on a cell phone because performing a complex visual task—like driving—distracts the brain from language processing. Marcel Just noted that the worst possible situation would be to drive in heavy traffic while having an important difficult cell phone conversation.

What can Counties Do?

Counties can take action to reduce employee multitasking. For example, counties can set up policies to restrict cell phone use while driving county vehicles. Employees can configure their workstations to reduce interruptions. They can set their phones to go directly to voice mail, or configure their computers so that no sounds or pop-ups occur when new emails arrive.

For more information, contact CTSI at 303-861-0507.

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