



Opinion

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# Multitasking during the lifespan

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## Abstract

A phenomenon observed in this information age is multitasking. Technology has made it possible for more people to do more tasks at seemingly the same time. Gender and age stereotypes exist that make it a given that women or young people multitask more than their counterparts. A literature review did not find convincing evidence that multitasking is real or a myth. Instead of multitasking, perhaps people are task switching at faster rates than others. The ability of persons who self-report as multitaskers are not reproducible in laboratory settings - confirming that task switching may be a proxy for multitasking.

**KeyWords:** Multitasking, Cognitive load, Task switching, Distractibility, Executive functioning

## Definition of multitasking

Multitasking is simply the performance of multiple tasks at tasks at the same time. Multi-tasking is the performance of two or more functionally independent tasks at the same time with each of the tasks having separate goals. It is composed of distinct stimuli, mental transformation, and response outputs [1].

## Two real life examples

An example of multitasking is somebody driving a car and texting on their cell phone at the same time. This scenario is well-known to law enforcement agents because it is illegal to text while driving in many jurisdictions and countries. There is a concern of avoidable road traffic accidents which are blamed on distracted driving. The implication therefore is that people cannot do both at the same time. So, while one is a road user, the legal position is that they can only drive and if they have to use a phone should use hand free or employ Bluetooth devices.

Another example is media-related multitasking. For instance, when a person is working on their computer and listening to a lecture at the same time. This is a common occurrence in classroom

settings where students attend with a laptop to take notes. As messages come through on their internet-connected laptops, they may respond to them. As well, students may use the internet to search websites, even educational websites related to the lecture at hand while they are in the classroom. It may appear to be rude when they are not following the lecture or not participating by asking or answering questions.

## Multitasking - Myth or Reality

There are different parts of the brain that are activated during multitasking. Research done by [2] used functional MRI to show parts of the brain that are activated involve areas of the brain related to attention and inhibitory control. In this research, multitasking correlated with poorer performance. Multitasking was associated with high distractibility and low executive functioning.

Another research also investigated whether people known to multitask are better in the laboratory setting when presented with multiple tasks. [1] investigated people with a high perceived ability to multitask. They found a negative correlation with basic skills necessary for multitasking. People who self-reported to multitask

often inflated their ability and did not have performance benefits in the laboratory setting.

Both of these cases suggest that multitasking does not improve the speed of performance. Another explanation is that what is happening is task switching where the participants did tasks sequentially rather than concurrently. Furthermore, multitasking does not improve efficacy or reduce the cost of task switching [3].

As fluid intelligence decreases with age, it is expected that multitasking or task switching will be affected by aging. However, the factors that affect multitasking include not just age differences but also cognitive load, task complexity, gender and limited by one's memory. Multitasking is not in the exclusive domain of women or young people [4].

There are also gender stereotypes that women are better at multitasking. Homemaking and motherhood, which are important roles of women in traditional societies, require an enormous amount of multitasking or task switching. The research by [5] did not find any significant difference between males and females to explain this. A common saying is: what is worth doing, is worth doing well. The literature does not support that multitasking produces efficiencies or cost savings. While younger people are better with fluid intelligence in the ability to learn new things fast, cognitive flexibility and task switching, older ones have better crystallized intelligence which comes with practice making one better at doing the same things. Multitaskers do not necessarily do a better job. It may be better in fact to do a good job one at a time than doing too many things at a time at the expense of the job quality [6].

## Conclusion

The jury is out on whether multitasking is real or a myth. The literature review did not find strong evidence to support multitasking as real. There are though, age and gender stereotypes that make it a given that young people or women are multitaskers. The recommendation for future research is that variables like cognitive loading, task complexity, gender and age differences be considered when conducting experiments to investigate multitasking. The limitation of a laboratory setting where multitasking is set up as two tasks with different distinct stimuli makes multitasking too simplistic. However, it is necessary to break real world experience of multitasking into two or three components in order to measure differences in speed or efficiency, if any exists.

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