Multitasking: the solution for keeping up with the modern world speed?

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Abstract

In the rush of the technology age, where most people are part of a 24/7 community, it might seem appropriate to perform more than one job at a time. Multitasking is the idea of having multiple tasks competing for your attention. The fact that attention is a very limited resource is skipped and the overall impression is that you are saving time, energy, and space for later rest. Unfortunately, the study shows otherwise. While in the heat of the work you might feel like the output is efficient, the actual outcome - in most cases- is not as good as if you were not "multitasking"

I. Introduction

When you start an activity, it takes time to get fully focused. After some time, you will probably be doing it with higher efficiency and less effort. That is, the regions responsible for this specific action are activated and the neurons are already fired up.

In case you want to switch tasks, there are two stages: "the Goal Shifting" which is just deciding you want to do task 2 now instead of task 1. And stage two: "rule activation" you are turning off the rules for task 1 and turning on the rules for task 2 [1].

Depending on the type and familiarity of the tasks, this process could either be flawless that you would not even be aware of or it could be not. Problems arise when switching causes conflict between the current physical and mental states. The operations required to make these changes take time and resources and thereby affect performance. Although switch costs may be relatively small, sometimes just a few tenths of a second per switch, they can add up to large amounts when people switch repeatedly back and forth between tasks. Thus, multitasking may seem efficient on the surface but may take more time in the end and involve more error.

II. Like a clown box, but scarier

When focused on a single task, our attentional resources are well directed and uninterrupted [9]. Information is neatly processed, encoded, and stored. When a secondary task is added, attention must be divided, and the processing of incoming information becomes fragmented. As a result, encoding is disrupted [2], leading to the reduction of the quantity and quality of stored information.

How focused you are during the task determines how detailed you are likely to remember it. Information processed without interruptions is way less prone to errors than information perceived during multitasking. Performance declination is more likely to happen when attention is divided.

When interruptions are attention-consuming, they can increase feelings of stress and anxiety by subjective and physiological measures. For instance, when you have 18 tabs open in one window and a deadline in 47 minutes, having a mail notification pop out of your screen or hearing Microsoft Team's ringer is not really calming.

III. Multitasking is contagious

Laptops are being more common in classrooms. The dependence on technological methods to facilitate the learning process and make it more interactive is increasing. However, students are more commonly found engaged with their laptops or smartphones with irrelevant actions to the learning process. In an experiment conducted at York University [2], participants who multitasked during the lecture scored significantly lower than participants who did not multitask.

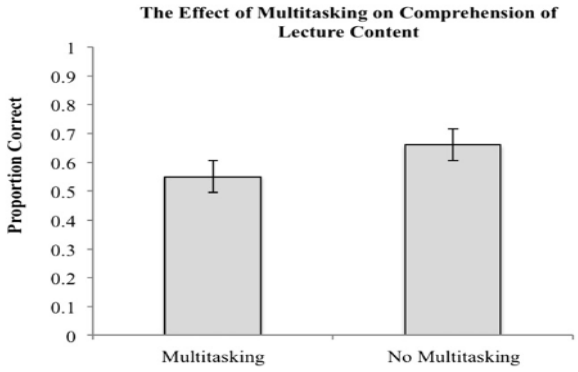

Figure #1: The effect of multitasking on comprehension of lecture content

You could predict that referring to the fact that there are limitations to how well multiple tasks can be carried out concurrently. But could viewing a multitasking peer affect performance? Another experiment by (McMaster University, Department of Psychology, Neuroscience, & Behavior) [2] investigated whether being in direct view of a multitasking peer would negatively influence learning as measured by performance on a comprehension test. A group of participants was asked to take notes using paper and pencil while attending the lecture. Some participants were strategically seated throughout the classroom so that they were in view of multitasking confederates on laptops, while others had a distraction-free view of the lecture. Confederates were typing notes on the lecture and performing other concurrent, irrelevant online tasks. The results were as follows: Participants in view of multitasking peers scored significantly lower on the test than participants, not in view of multitasking peers. Conclusion: Peer multitasking distracted participants who were attempting to pay some attention to the lecture. Those in view of a multitasking peer scored 17% lower on a post-lecture comprehension test.

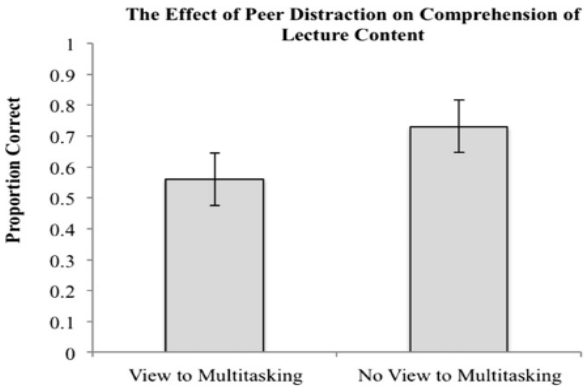

Figure #2: The Effect of Peer Distraction on Comprehension of Lecture Content

IV. Drawbacks of Multitasking

It is hard to quit multitasking, scary, and might seem unrealistic in some cases. Just to realize the true impact, this is a thorough review of multitasking dangers.

A study published in Plos-One journal [4] demonstrates that multitasking can cause physical damage to the brain. Gray matter, which plays a vital role in attention, consciousness, and memory [5] can have less density in the case of heavy media multitaskers.

A paper published in NCBI [6] studies the relation between working memory, long-term memory, and media multitaskers. Results show that media multitasking negatively affects both types of memories. The frequent attention division between multiple tasks weakens the ability to recall information over long -or short- periods.

A study published in the journal Neuroimage [7] studied the effect of distractive stimuli on performance. Results show clear performance declination when exposed to irrelevant sources of attention-capturing stimuli.

A study of college students [8] found that as students multitasked more while using their computers, their stress levels elevated. The constant exposure to new information that needs to be processed escalated the stress responses.

V. Conclusion

To sum up, where multitasking might appear as a perfect solution for sparing time, zooming in a little reveal that under the name of getting a variety of duties done, time is lost, efficiency is lost, and mental health is lost. Multitasking does not only affect you but those around you as well. Instead of starting all due tasks at the same time, take them one by one. Limit distractions to increase efficiency.

VI. References

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