

Colorado Probation Research in Brief

Working memory, fluid intelligence, and impulsiveness in heavy media multitaskers

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Key Words: Self-control, impulsivity, task switching, attention, working memory

Summary/Conclusions

Prior research has identified links multitasking using media and problems with attention and memory. The current article examined whether heavy media multitasking had an impact on attention, working memory, task switching, fluid intelligence, and self-reported impulsivity and self-control. While there were no differences in light media multitaskers (LMM) and heavy media multitaskers (HMM) ability to multitask, the study identified that HMM reported being more impulsive, lower self-control, and lower measures of fluid intelligence.

Limitations of Information

The studies utilized a series of surveys and tests, the impact of HMM on neural patterns and performance in various real world tasks is still unclear. It is also uncertain how personality and individual characteristics are impacted by HMM. While impulsivity and self-control was positively associated with HMM, the study did not examine if HMM influenced those factors. While this study did not find a link between HMM and attention or task switching, previous studies have shown that multitasking is detrimental to task performance.

Caveat: The information presented here is intended to summarize and inform readers of research and information relevant to probation work. It can provide a framework for carrying out the business of probation as well as suggestions for practical application of the material. While it may, in some instances, lead to further exploration and result in *future* decisions, it is not intended to prescribe policy and is not necessarily conclusive in its findings. Some of its limitations are described above.

Help Individuals Focus on a Single Task

The access and availability of information has dramatically altered behavior of individuals. Numerous studies have uncovered decreased performance in tasks while engaging in multitasking. Some studies assert the decreased performance is due to individuals being more susceptible to distraction and problems with working memory. The present article examined the effects of media multitasking on attention, working memory, task switching, fluid intelligence, self-reported impulsivity, and self-report self-control.

In the first study, researchers utilized three different surveys on 221 participants. The survey covered media multitasking habits, impulsivity, and self-control. From the surveys, researchers identified 33 individuals were HMMs and 36 were LMMs. The HMM and LMM groups were brought in to a lab to complete tests that measured attention, working memory, task switching, and fluid intelligence. Researchers performed a second study consisting of 57 participants (27 HMMs and 30 LMMs) with the same experiment; however, the participants were also measured on their reaction time. Finally, in a third study, researchers utilized a different test that analyzed attention and working memory on 53 (27 HMM and 26 LMM) participants.

The studies could not confirm that HMM had any impact on attention, working memory, or task switching. The studies did find HMMs had lower levels of fluid

intelligence, lower levels of self-control, and higher levels of impulsivity. A possible explanation for lower levels of fluid intelligence in HMMs is that they would give up on more difficult problems, opting to just guess an answer instead.

Practical Applications

- ✓ While it is not clear if HMM led to higher levels of impulsivity and lower levels of self-control, be aware of your own habits using technology and how it may impact your brain.
- ✓ Try to focus on a single task at a time. Multitasking can have an effect on performance and memory.
- ✓ When working with probationers, utilize reflections and summaries when discussing important topics or providing directions. This helps ensure that information was received by both you and the client.
- ✓ Discuss with clients their media multitasking, it may lead to discussions about impulsivity, self-control, and attention.
- ✓ Have conversations with clients about impulsivity and self-control and what contributes to these issues.
- ✓ Ask kindly that probationers put away cellphones during probation appointments and groups.
- ✓ Consider collaboratively establishing case plan goals or assigning homework that builds tenacity and determination. This may help individuals who struggle with impulsivity and self-control.