



Multitasking and Its Relationship with Memory, Attention, and Stress Among College Students (18–24 Years)

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Abstract: The growing presence of digital technology in everyday life has made multitasking a common behaviour among students. The present study examines the association between multitasking preference and three important psychological factors: memory, attentional control and perceived stress among college students. A total of 150 participants between the ages of 18 and 24 completed standardized self-report measures. The findings indicated that students who reported higher multitasking tendencies also experienced more frequent memory-related difficulties and higher levels of stress, along with reduced attentional control. Further analysis using regression revealed that attention and stress significantly contributed to multitasking behaviour, whereas memory did not independently predict it. These findings are based on responses collected from students in a real academic setting.

Keywords: *Multitasking, Attention, Memory, Stress, College Students*

1. Introduction

In recent years, the way students interact with information has undergone a major transformation. The availability of smartphones, laptops and uninterrupted internet access has made it easier to perform several tasks simultaneously. As a result, multitasking has shifted from

being occasional to becoming a routine part of academic life. It is now common for students to attend classes while also engaging with messages or social media, leading to frequent division of attention.

The period of emerging adulthood, generally considered to be between 18 and 24 years, is marked by ongoing cognitive development. During this stage, abilities such as attention regulation, working memory and self-control continue to develop (Arnett, 2015). At the same time, students deal with academic demands, future-related concerns and social expectations, all of which can contribute to increased stress. In this context, multitasking may serve both as a way of coping with these pressures and as a factor influencing cognitive functioning.

Previous research indicates that multitasking can influence learning and mental processes, particularly when tasks require sustained concentration. However, these effects vary across individuals. Differences in attention and stress levels appear to be especially important in understanding this variation. In everyday college life, this pattern can be seen quite clearly, especially during lectures and study time. Many students feel that multitasking helps them save time, even though it may reduce their overall focus. Therefore, this study aims to understand multitasking in a more practical way by looking at its link with memory, attention and stress.

2. Review of Literature

Research on multitasking has often focused on how the brain manages multiple activities at the same time. Early work by Monsell (2003) showed that switching between tasks can slow down performance and increase the chances of errors, which reflects the limits of human cognitive processing. This also suggests that handling several tasks together is not always efficient in real-life situations.

Later studies moved beyond controlled settings and examined multitasking in everyday life, especially in relation to media use. Ophir et al. (2009) found that individuals who frequently engage in media multitasking tend to perform poorly on tasks that require sustained attention and the ability to filter out distractions. These findings have raised concerns about how such habits may affect cognitive control over time.

The link between multitasking and memory has also been widely studied. Craik et al. (1996) reported that when attention is divided during learning, the depth of processing decreases, which leads to weaker memory retention. Similarly, Uncapher and Wagner (2018) found that

multitasking is associated with poorer long-term memory outcomes. In addition, Ralph et al. (2014) observed that frequent multitaskers often experience everyday memory problems, such as forgetting tasks or misplacing items.

Attention plays a central role in multitasking behaviour. According to attentional control theory proposed by Eysenck et al. (2007), individuals differ in their ability to maintain and shift attention effectively. Those with lower attentional control are more likely to become distracted and switch tasks frequently. Supporting this, Cain et al. (2016) found that heavy multitaskers struggle to sustain attention and are more easily drawn toward irrelevant stimuli. Over time, this pattern may further reduce their ability to focus.

Stress is another important factor associated with multitasking. Managing several tasks at once can increase cognitive load and lead to higher levels of psychological strain. Becker et al. (2013) reported that higher multitasking is linked with greater stress and emotional difficulties. Similarly, Reinecke et al. (2017) found that constant switching between tasks creates a sense of pressure and negatively affects well-being. From the perspective of Conservation of Resources theory (Hobfoll, 1989), continuous demands on cognitive resources may eventually lead to exhaustion. In everyday student life, this can often be observed during exams or assignment deadlines.

In the Indian context, research findings show similar trends. Panda and Jain (2018) reported that students who engage more frequently in multitasking also experience higher levels of academic stress. Kaur and Kaur (2020) found that lower attentional control is associated with increased smartphone-based multitasking. These findings highlight the importance of studying multitasking within specific cultural settings.

Studies on gender differences in multitasking have produced mixed results. While some research points to small differences, other studies report no significant variation. However, Poposki and Oswald (2010) found that males tend to report higher levels of multitasking preference, which may be due to differences in usage patterns rather than cognitive ability. Overall, existing literature highlights a consistent relationship between multitasking, attention and stress, whereas the role of memory appears to be less direct. This indicates the need for studies that examine these variables together, which the present research attempts to address.

2.1 Objectives

- To assess the levels of multitasking, memory, attention and stress among college students.

- To examine the relationship between multitasking and memory, attention and stress.
- To explore gender differences in these variables.
- To determine the predictors of multitasking behaviour

2.2 Hypotheses

- Multitasking will show a significant relationship with memory, attention and stress
- Gender differences will be present in the study variables
- Memory, attention and stress will significantly predict multitasking behaviour

3. Method

3.1 Participants

The sample consisted of 150 college students, including 77 males and 73 females, within the age range of 18 to 24 years ($M = 20.85$, $SD = 1.64$). Participants were selected from colleges in North India using purposive sampling.

3.2 Measures

Multitasking preference was measured using the Multitasking Preference Inventory. Memory was assessed through the Prospective and Retrospective Memory Questionnaire. Attentional control was measured using the Attentional Control Scale, while perceived stress was evaluated with the Perceived Stress Scale.

3.3 Procedure

Participants were asked to complete the questionnaires either online or in a paper-based format after providing informed consent. The entire process required approximately 20 to 25 minutes. Some participants also asked basic questions during the process, which were clarified before they continued.

3.4 Data Analysis

The collected data were analyzed using descriptive statistics, correlation analysis, t-tests and regression analysis.

4. Results

The findings revealed that higher levels of multitasking were associated with increased memory-related difficulties and higher stress levels. At the same time, multitasking showed a

negative relationship with attentional control, indicating that individuals who multitask more tend to experience reduced focus.

Male participants reported greater multitasking preference compared to female participants, while no significant differences were observed in memory, attention or stress.

Regression analysis demonstrated that attention and stress significantly predicted multitasking behaviour, with attention emerging as the strongest predictor. Memory did not show an independent contribution.

5. Discussion

The results of this study show that multitasking is not just a simple habit, but something that is connected with both thinking ability and emotional state. One thing that stands out clearly is its link with attention. Students who reported that they find it difficult to stay focused were also the ones who switched between tasks more often. This is quite similar to what earlier researchers have pointed out. For example, Cain et al. (2016) found that heavy multitaskers are more likely to get distracted easily. In the same way, Eysenck et al. (2007) explained that not everyone has the same level of control over their attention, and this difference can affect how people manage multiple activities. In real college situations, this can be noticed when students keep moving between studying, checking their phones and doing other small tasks without finishing one properly.

Stress also seems to play an important role here. Students who feel more stressed may start multitasking either to deal with a lot of work at the same time or sometimes just to avoid focusing on one difficult task. This idea is supported by Becker et al. (2013), who reported that higher multitasking is linked with higher stress levels. At the same time, it is also possible that multitasking itself increases stress. When a person keeps switching between tasks, it can create confusion and reduce efficiency, which in turn can make them feel more pressured (Reinecke et al., 2017). So, in a way, stress and multitasking may keep affecting each other again and again.

When it comes to memory, the role seems a bit different. In this study, memory was related to multitasking but it did not come out as a strong predictor. This does not mean that memory is not affected at all. Earlier work by Craik et al. (1996) showed that when attention is divided, people are not able to process information deeply, which can lead to weaker memory later. But in the

present case, it looks like memory problems may be happening more because of poor attention and higher stress, rather than multitasking directly causing them.

Overall, the findings suggest that if students are able to improve their focus and manage stress better, they may reduce unnecessary multitasking. Similar ideas have been discussed in earlier studies as well, where better control over attention was linked with improved learning (Ophir et al., 2009). At the same time, it would not be practical to say that students should completely stop multitasking, because in today's environment it is almost unavoidable. A better approach may be to help students become more aware of how they use their attention and how they handle multiple demands in daily life

6. Conclusion

The study concludes that multitasking among college students is more strongly associated with attentional control and stress than with memory. While memory is related, it does not independently explain multitasking behaviour. Working on better focus and reducing stress in daily life may help students improve their study habits.

References

- Cain, M. S., Leonard, J. A., Gabrieli, J. D. E. and Finn, A. S. (2016). Media multitasking in adolescence. *Psychonomic Bulletin & Review*, 23(6), 1932–1941.
- Craik, F. I. M., Govoni, R., Naveh-Benjamin, M. and Anderson, N. D. (1996). The effects of divided attention on encoding and retrieval processes in human memory. *Journal of Experimental Psychology: General*, 125(2), 159–180.
- Eysenck, M. W., Derakshan, N., Santos, R. and Calvo, M. G. (2007). Anxiety and cognitive performance: Attentional control theory. *Emotion*, 7(2), 336–353.
- Becker, M. W., Alzahabi, R. and Hopwood, C. J. (2013). Media multitasking and symptoms of depression and social anxiety. *Cyberpsychology, Behavior and Social Networking*, 16(2), 132–135.
- Reinecke, L., Aufenanger, S., Beutel, M. E., Dreier, M., Quiring, O., Stark, B., Wölfling, K. and Müller, K. W. (2017). Digital stress over the life span: The effects of communication load and internet multitasking on perceived stress and psychological health impairments. *Journal of Media Psychology*.

Ophir, E., Nass, C. and Wagner, A. D. (2009). Cognitive control in media multitaskers. *Proceedings of the National Academy of Sciences*, 106(37), 15583–15587.