Capacity Limits of Working Memory: The Impact of Multitasking on Cognitive Control in Digital Natives and Digital Immigrants

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Media multitasking is increasingly prevalent in our society, especially among the young. Processing multiple streams of information simultaneously, however, is cognitively challenging, thereby potentially causing reduced effectiveness in the performance of the overlapping tasks. This study examines the effects of age and chronic and active multitasking on the ability to process information. Participants were randomly assigned to either a multitasking or non-multitasking room; both groups completed a standardized questionnaire used to calculate a multitasking index score and tests to assess the participants' ability in Task Filtering and Task Switching. Participants in the multitasking room completed these studies simultaneously with additional auditory, visual, and cognitive tasks. The results of this investigation suggest that adults, regardless of their multitasking habits, are better at filtering out distractions and switching between tasks than adolescents. All participants, apart from adolescent High Media Multitaskers (HMM), performed best in the Non-Multitasking Room. Adults generally are Low Media Multitaskers (LMM). They are better able to focus and limit distractions. They tend toward top-down attentional control and are more able to voluntarily focus their attention. Adolescents generally are HMM. They are more distracted by competing information and are more susceptible to irrelevant representations in memory. They tend toward bottom-up attentional control and are more explorative in their attention. This study suggests that the pattern of media consumption is reflected in the pattern of ones information processing.

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