Multitasking

Sandra L. Calvert

Multitasking is a complex cognitive skill that requires a person to switch tasks, moving quickly from one activity to another. Youth today regularly engage in multitasking, particularly when using media (Rideout, Roberts, Foehr, 2005). For instance, adolescents write papers using word processing software, IM their friends, and listen to music all in the same time frame.

Many argue that multitasking leads to superficial processing on tasks. There is some reason to think that may be the case. When youth who are multitasking move rapidly from one task to another, they do not engage in an attentional flow that could be part of concentration.

Daniel Anderson and his colleagues (e.g., Anderson, Choi & Lorch, 1987) call this attentional flow attentional inertia. Attentional inertia basically means that the longer that a look is in progress, the longer that look is likely to continue. Children who demonstrate bouts of attentional inertia become focused on an activity, such as television viewing, and it is difficult to distract them from the task that they are doing. They also demonstrate startle responses when someone touches them. Adults who demonstrated inertial engagement also recognized more television program content (Burns & Anderson, 1993). If multitasking disrupts this kind of easy attention to activities, learning could be impeded.

Alternatively, multitasking could be seen as an adaptive response to a rapidly changing environment that makes multiple, simultaneous, competing demands on people. Few people have the luxury in this day and age to have uninterrupted time to do a single task. Rather, days are filled with ongoing interruptions that require people to move away from and come back to what the primary task is. From this perspective, multitasking could lead to the development of strategies, e.g., task switching, that are adaptive for the modern 21st century workplace.

Indeed, even the simplest of computer activities requires children to switch tasks repeatedly. For instance, to understand a computer story, young children must move from focusing on how to use a computer mouse to how to understand the computer content that is accessed via the mouse. Children with better executive control skills, in which they must inhibit actions and switch behaviors, are more likely to use a computer mouse than those with less developed skills (Lauricella, Barr & Calvert, in press). While young children who use a mouse are just as able to understand the content associated with the computer activity, it does take them longer to complete the story than those children who let their parents control the mouse (Lauricella et al., in press). Similarly, adolescent college students who multitasked more while writing a critique took longer to complete the task, but their papers were just as good as those who did not multitask (Calvert & Wells, 2008). In fact, the multitaskers sometimes took twice as long to complete the activity. Note, however, that these critiques were for extra credit, and hence, students got the same number of extra credit points whether they wrote a good paper or not. Although there was a positive correlation between how well students wrote these critiques and other grades in the class (such as exams), the scores on the critiques were lower than those on the exams (Calvert & Wells, 2008).

  The question to me, then, involves how multitasking influences the quality of performance and the quantity of experiences that can be accomplished. More things can be done at once when multitasking, but at the cost of time. There are, for instance, time costs involved when one switches one's train of thought from one activity to another. Disruption of information processing at a deeper level is also possible, but it is not inevitable, particularly for tasks that are rather automatic and that do not require deeper levels of concentration.

  Multitasking is clearly a part of 21st century life. Exactly how multitasking affects attention, concentration, and learning is a matter of social concern, and it is an important question for scholars to address.

References

Anderson, D.R., Choi , H.P. & Lorch, E.P. (1987). Attentional intertia reduces distractibility during young children's TV viewing. *Child Development*, *58*, 798-806.

Burns, J. & Anderson, D.R. (1993). Attentional inertia and recognition memory in adult television viewing. *Communication Research*, *20*, 777-799.

Calvert, S.L. & Wells, J. (2007, January). Age and gender effects of multitasking on academic performance. Paper presented at the Hawaii International Conference on Education, Honololu, Hawaii.

Lauricella, A., Barr, R. & Calvert, S.L. (in press, 2009). Emerging computer skills: Influences of young children's executive functioning abilities and parental scaffolding techniques, *Journal of Children and Media, Vol. 3*.

Rideout, V., Roberts, D. F., Foehr, U. G. (2005). *Generation M: Media in the lives of 8-18 year-olds*. Washington, D.C.: Kaiser Family Foundation Report.