# Multitasking Helpful or Harmful?

**Multitasking has been shown to slow learning and reduce efficiency. How does laptop usage in class affect your learning--and that of your classmates?**

by Amy L. Jarmon

Originally published in: , April 2008, Vol. 36, No. 8,

Multitasking has become commonplace in our fast-paced, high-tech world. Many people consider multitasking to be a highly desirable characteristic at work, home, and school. Some employers include the ability to multitask as a necessary prerequisite in their job advertisements. Students regularly use technology to multitask while working on homework assignments. The mobile phone and BlackBerry are omnipresent tools people use in restaurants, stores, and other public places.

Over the last several years, media attention on multitasking has increased as researchers have questioned its benefits. Articles on the topic have appeared in *Time*, the *New York Times*, and the *Chicago Tribune* to name a few print sources. CNN and ABC are among the television networks that have run stories on the subject. Even Allstate commercials now focus on the dangers of multitasking when driving (talking on the phone, eating, and other tasks).

Multitasking can occur in three ways. First, a person may work on two or more tasks simultaneously, such as reading a case while watching television. Second, a person may switch between tasks repeatedly, such as alternating between answering e-mails and listening to the discussion during a class. Third, a person may complete two or more tasks in rapid succession, such as scanning a case, the Westlaw headnotes, and a class script right before class rather than reading the case previously. In short, multitasking divides your attention.

Multitasking is not a new phenomenon. Mothers with small children excelled at multitasking long before it captured the imagination of the business world. Students handwrote class notes while listening to class lectures before the advent of laptops in the classroom. Students also doodled, played bingo, or did crossword puzzles during class prior to the omnipresent laptop. However, the availability of technology, from computers to the Internet to mobile phones to PDA/ smartphones has increased the trend to multitask in all areas of life.

In the 1970s, time management and task organization experts wrote about the need to focus on one project at a time without interruptions in order to be efficient and increase productivity. In the '80s and '90s, cognitive psychologists alerted us to the fact that the number of things people can pay attention to at once is limited. Parents have told their children for decades to turn off the television when doing their homework. However, conventional wisdom has been lost in the excitement over new technology that purports to help us accomplish more tasks in less time.

Recent research has focused on explaining how multitasking affects brain function. The *Journal of Experimental Psychology: Human Perception and Performance* reported a 2001 study by Joshua Rubinstein, David Meyer, and Jeffrey Evans on the brain's executive control process.

During multitasking there are two processing stages. First, there is goal shifting in which the brain decides to do a new task instead of the original task. Second, there is rule activation in which the brain turns off the rules associated with the original task and turns on the rules associated with the second task. The rule-activation step takes time away from performance each time a switch between tasks is made. Although the amount of time is only several tenths of a second, the delay adds up as a person repeatedly switches between tasks.

At best, a person needs to be aware that multitasking causes inefficiency in brain function. Think of the student whose lack of attention in class while answering e-mails causes him to miss the professor's announcement of a change in the reading assignment. At worst, multitasking may be deadly. The most common example in the media is the motorist who neglects to make a split-second decision to avoid an accident because he was talking on a mobile phone.

Basex, a New York City research firm, published a 2005 report on the negative impact of multitasking on productivity among information workers. The report estimated that the interruptions and resulting downtime because of e-mail, instant messaging, the Internet, and other technology cost U.S. businesses $588 billion per year. Even Microsoft has a research team that is studying the detrimental effects of multitasking with technology.

A 2003 article by Helene Hembrooke and Geri Gay in the *Journal of Computing in Higher Education* discussed the effects of computer multitasking during class lectures. Two groups of students in an upper-division college course were studied. One group had unrestricted use of computers during a class lecture while the other group of students could not use computers during their class lecture on the same material. The students who were free to e-mail, instant message, and browse the Internet during the lecture performed less well on a surprise quiz after the lecture. The quiz included both multiple-choice recognition questions and short-answer recall questions.

Although media sources reported this article as proof that multitasking was detrimental to learning, the researchers were more cautious. The students who multitasked did more poorly on the traditional memory quiz but did not do poorly in the overall class. The researchers suggested that class structure, class dynamics, and the type of learning assessments used by the professor might affect whether multitasking would have the same impact in every learning situation. In addition, the researchers suggested that it may be possible for multitaskers to learn effective self-monitoring strategies to ameliorate the negative impact of multitasking during class.

For law schools, the topic of multitasking is usually raised regarding laptops in the classroom. Professor complaints focus on three main areas: students blindly transcribing verbatim class notes, students using laptops inappropriately (e-mails, instant messages, Web surfing, playing games), and professors feeling disconnected from their students because they are hidden behind laptop screens. Student complaints focus mainly on the distractions to learning caused by classmates' inappropriate behavior.

These law school concerns have been extensively covered on law professor discussion e-mail lists and blogs, in law professor workshops at conferences, and in law-related newsletters and

journals. For example, a 2007 article by Washburn University law professor Nancy Maxwell discussed her ban on laptops in the classroom.

Maxwell felt disconnected from her students and realized that inappropriate use of computers during class appeared to be contributing to an unsatisfactory classroom experience exemplified by less discussion and the need to repeat questions. To compensate for the lack of computers for note-taking, Maxwell made significant changes in her classroom teaching. She added study questions prior to class to assist in in-depth reading and posted class notes on the class website. Although students generally did not find the ban on laptops detrimental, they did state that without these changes in teaching style they would have felt disadvantaged.

At many law schools, the Student Bar Association has taken up the cause of students who are unhappy with laptop bans by selected professors. Some students feel that they should have the autonomy to make their own decisions about multitasking with laptops in the classroom. Students who do not misuse laptops often feel that they have an advantage over students who multitask in class because those students are likely to get lower grades. Some students feel that there are easier and fairer solutions to the problem than outright bans on laptops for all students. Students point to the difficulty of taking handwritten notes when a professor is disorganized or has a teaching style very different from a student's learning style.

Both professors and students tend to agree that laptop multitasking that distracts other students should be diminished. Mechanisms short of an outright ban on laptops are possible. These solutions may include, for example, the use of privacy screens, reserving back-row seats for unrestricted laptop use, or reserving several rows near the front for those who get distracted by laptops.

Unfortunately, before they ban laptops, professors may not consider that many students learn in different ways than the professors do. The kinesthetic learning style indeed means that some students focus better when typing notes rather than handwriting notes. Sequential-sensing learners need to take more detailed notes than their classmates because they do not process the big picture of a course until they have first learned the separate units and details of the material. And typed notes are easier to read than handwritten notes no matter how neat the handwriting.

In addition, it is more efficient to condense material into an outline from typed notes and briefs than from handwritten materials. The "copy," "cut," "paste," and "find" functions on the computer are boons to outlining. In an era of students taking shortcuts in learning, encouraging them to make their own briefs, class notes, and outlines is important. By adding another layer of work through retyping, we may short-circuit their learning process.

Whether you are for or against laptops in the classroom or personally believe that multitasking is beneficial or harmful, if you want to become a more focused and efficient learner, keep in mind the following suggestions. Each one takes into consideration the research on learning styles as well as the research on multitasking.

Realize that the brain has limited capacity to do several things at once. Multitasking, especially for complex tasks, does slow you down. You'll have downtime when you switch between tasks

because of the brain's rule activation stage of processing. The downtime for a single occurrence may be slight, but the accumulation of downtime ultimately makes multitasking less productive. While you are focusing on a secondary task, such as e-mailing a friend, you *will* lose focus on the primary task of listening to class discussion.

Have respect for your classmates. If you choose to multitask, you shouldn't do so to the detriment of others. If your professor allows laptop use, then sit in the back row or buy an inexpensive privacy screen to minimize distractions for your classmates. (Screensavers that have multiple rotating photos or that have flashing images can also be distracting to others even if you do not multitask.)

Have respect for your professors. Professors provide you with information and discussion in class that will enhance your learning. If you become immersed in other tasks during class, you are likely to be only partially focused on the discussion, the hypothetical given, or the question asked. You slow down the entire class when a professor has to repeat a question or you answer wrongly because you were not paying attention to the facts in the hypothetical.

Multitask in less distracting ways. Multitask with a repetitive, undemanding secondary task that will not distract you from focusing on your primary task. In this way, you're not switching repeatedly between tasks but doing one that requires no concentration at the same time as one that does. Listen to instrumental music rather than music with lyrics while you read for class. Listen to an audio study aid while you are on the treadmill at the gym instead of while you jog through traffic in the neighborhood. Have a family member quiz you with flashcards while you make dinner with a simple recipe rather than while you are making a complicated gourmet meal for guests.

Avoid the seduction of technology while in class or studying. Use your computer only for taking notes during class so that it increases your learning. Turn off the e-mail alert function on your computer. Disable your Internet capability. Self-monitor your computer use by refusing to play solitaire, instant message, or surf the Web. Turn off your cell phone.

Recognize the stress of multitasking and take action to minimize its impact. Research shows that today's technology can lead to information overload, a feeling of being bombarded 24/7, and pressure to respond instantly to unimportant interruptions from e-mail, phone calls, or other technology. Try the following to minimize distractions:

1. Don't feel pressured to respond to every e-mail immediately. Respond quickly only to important e-mails. Respond to all other e-mails at set times in the morning, afternoon, and evening. Use your junk e-mail folder to block e-mails from family and friends who inundate you with cutesy poems and other nonessential information. Read it in junk mail at a more convenient time. Or, refuse to answer such e-mails. The senders are likely to delete you from their automatic distribution list after a period of silence.

2. Allow your phone to go to voice mail and return phone calls during scheduled times each day. You can check your voice mail between these times to determine if there are emergency calls that should be returned more quickly.

3. Set aside a technology-free day each week or each day during certain hours. Don't let e-mail, instant messaging, a mobile phone, or a smart phone run your life. By refusing to multitask constantly, you can lower your stress and reserve focused study or downtime for yourself.

Multitasking has several downsides. However, not all multitasking is equally disruptive. Every human being has multitasked. The trick is to be selective in multitasking and only do so when your focus on the primary task is not more important.

*[Amy L. Jarmon](), assistant dean for academic success programs at Texas Tech University School of Law, is a professor and coeditor of the Law School Academic Support Blog. She has practiced law in the United States and the United Kingdom.*