The Myth of Multitasking

Yes, cellphones and laptops do affect students' grades, and no, students can't multitask as well as they say they can.

Arnold Glass, a psychology professor at Rutgers University at New Brunswick, and Mengxue Kang, a graduate student, recently published a study in *Educational Psychology* that they say reveals a causal link between cellphone and laptop use during class and poorer exam scores.

Glass has been teaching for over 40 years and has been proactive about bringing new technology into the classroom. He's noticed changes in his students' behavior as they've become more used to the technology, and some of those changes are for the worse.

"For about five or six years, [student] performance was getting better and better," he said. "But because I was attuned to this, and because I was collecting an enormous amount of data, I was immediately aware when things started changing. Students started ignoring me -- they used to not ignore me."

Previous studies on the impact of personal devices on student performance have measured individual student scores against those of their peers, but, using what Glass calls a "platinum standard" method, Glass and Kang designed their experiment to test students' performance against themselves. One hundred and eighteen students, split between two virtually identical

sections of an upper-level psychology course, were told they could use their electronic devices in class during half of the lecture periods and asked to keep them put away during the other half. To enforce the rule, a proctor attended class on device-free days.

Glass and Kang measured student performance with daily quizzes, three unit exams and a cumulative exam over the course of the semester. Exam scores were poorer for all students on the material covered on device-approved days, regardless of their individual decisions to use their device or not. Previous lab studies have noted the effects of classroom distractions, but Glass and Kang's work confirmed those effects in an actual classroom.

"Students themselves shrug it off and say, 'Oh no, I can divide attention, this isn't bothering me,'" Glass said. "These are large enough effects that students' grades were clearly affected by [laptop and cellphone use]. Students really are hurting themselves by ignoring me -- this isn't just my ego."

Students' insistence on their ability to multitask isn't a matter of stubbornness; divided attention had no impact on day-to-day performance and students could accurately recall what happened in class that day even if they were using a cellphone or laptop. But the use of a device had a significant impact on long-term retention, a consequence Glass sees as more "insidious" because it happens over time.

"This is one of the occasional cases in human cognition where our intuitions mislead us, because even though they can divide their attention well enough to remember in the moment … what happens is that a week later, they've pretty much forgotten what happened in class," Glass said. "What's the point of going to class in the first place if a week later you don't remember it?"

In light of his findings, Glass bans laptops and cellphones during lectures, and he's made a habit of calling out his students when he sees them using one.

"I also tell [my students] I'll do something which most faculty will not do anymore: I'll call them out when I notice them ignoring me, and I'll call them out not because I'm tremendously offended by this, but because I know it negatively affects them."

He encourages other faculty to do the same but said that class evaluations discourage them from making their students uncomfortable.

"They wouldn't want to see their evaluations go down, and they're right, their evaluations will go down if they call students out," Glass said. "They want to maintain an atmosphere where the class views them as their friend and entertainer, so I don't really expect instructors to follow my advice."