

## Should Phones and Laptops Be Banned in the Classroom? Or Is This Just Much Ado about Nothing?

### Description

There's a scene in the 1995 movie *Clueless*, where the main character Cher is walking down the hallway of her high school, while chatting on a cell phone with her best friend Dionne. A few moments later, Dionne merges into the same hallway, and they hang up their phones while seamlessly continuing their conversation as they walk to their next class.

I distinctly remember that most of us watching this in the theater laughed, or at the very least chuckled, at the absurdity of the scene. But of course, that was 1995.

Because when you [watch this scene today](#), there's nothing funny or absurd about it at all.

Nowadays, having a cell phone in high school is pretty normal. Heck, in NYC, where middle school kids and some elementary school kids commute to school by themselves, it's not unusual for 4<sup>th</sup> or 5<sup>th</sup> graders to have cell phones.

Of course, this has led to the need for rules about phone use during school hours. Which seems pretty reasonable, when we're talking about cultivating an effective learning environment for elementary, middle, and high school students.

But I've also heard stories of college professors banning phones and laptops in class. Which, I would probably be a little resentful of – if I had had a phone in college, or if my “laptop” wasn't a [10lb beast that barely fit in my backpack and whose battery wouldn't even last through a single class](#).

So is there any actual data to suggest that our learning is compromised when devices are allowed in class? Or is this just one of those things teachers like to complain about, because it *seems* like students are distracted at times?

With finals right around the corner, now seemed like a good time to explore this a bit further.

### What's wrong with multitasking?

We're all guilty of multitasking from time to time, but we're not actually wired to be able to do two things at once, so there are some costs associated with trying to split our attention.

One has to do with the “selection effect.” For instance, whenever both of my kids try to talk to me at the same time (usually to explain why the other one is being the world's worst sibling), my brain just kind of locks up, and I end up having no idea what's happening with either story. Try [this fun BuzzFeed multi-tasking challenge](#)

if you want to try your hand at this sort of thing.

The other cost of divided attention is known as the “switching effect.” This is what happens when I’m trying to bake cookies while helping my daughter write her paper on South America’s ecosystems. Every time I switch back and forth between cooking and homework, there are brief moments when I’m neither cooking nor helping. And it also takes me a little time to re-orient myself to the recipe and make sure I’m not confusing baking powder with baking soda or teaspoons with tablespoons, as I transition back from trying to create perfectly square text boxes in Google Docs.

When people raise concerns about devices in the classroom, I think it’s usually related to these first two issues.

But there’s also a potential *third* cost to divided attention, which might actually be more important.

*Retention.*

## Dual-system hypothesis

The details are a little beyond the scope of this article, but the “dual-system” hypothesis suggests that memory is comprised of two systems, involving different parts of the brain, one of which is involved in perception and recognition (“instrumental” system), and the other with long-term retention of action sequences or responses (“habit” system).

The implication of all this, is that it’s possible to understand a new concept pretty well today as information passes through the instrumental system, but *not* be able to recall that information weeks or months later, if it hasn’t been processed sufficiently by the habit system.

So a pair of researchers at Rutgers ([Glass & Kang, 2018](#)), decided to take a closer look.

## Devices allowed on some days, and banned on others

118 university students, all enrolled in a cognitive psych class, were included in the study.

In half of the class meetings, laptops and phones were banned. In the other half, laptops and phones were allowed<sup>1</sup>.

The students’ knowledge was tested over the course of the semester in three ways – through 1) [kahoot](#)-style<sup>2</sup> multiple-choice questions presented during class, 2) unit exams that were given about every month, and 3) a cumulative final exam given at the end of the semester.

So how did the students do?

## Results

### In-class quiz performance

Well, the in-class quiz scores were pretty much the same whether it was a devices-banned day or a devices-allowed day. Which suggests that phones/laptops didn't have much of an effect on students' comprehension of class material. So maybe devices aren't as disruptive as people like to say they are?

### Unit exam performance

Well, not necessarily.

Because when the researchers looked at the unit exams, in which students were tested on material spanning about a month's worth of lectures, there was a slight, but statistically significant difference between students' recall of material covered on devices-allowed days and devices-banned days. Where students performed better on questions from lectures in which devices were banned.

### Final exam performance

And when they looked at the final exam, which included material from the entire semester of lectures and reading, the difference was even more pronounced.

Basically, the difference in performance between questions from the devices-banned lectures and devices-allowed lectures was about half a letter grade. Where students were able to correctly answer 87% of the questions from the devices-banned lectures, but only 80% of the questions from devices-allowed lectures.

## Comprehension vs. recall

So this is actually pretty interesting. Because it means that in the short term, having your phone out during class probably won't affect your ability to understand whatever new material your teacher is teaching in that moment. So it *seems* that your phone or laptop isn't interfering with your learning.

But the study findings suggest that the consequences of divided attention only become apparent weeks or months later, when your *recall* ability is really being tested. Where it starts to matter that the material wasn't processed quite as deeply as it could have been, when originally presented to you.

Interesting side note: The researchers also looked at the exam and final performance of students who didn't use their devices during class, even on days when they were permitted. And even *their* performance took a hit as well. Why?

Well, the researchers think that it's probably because being surrounded by other people tapping away on

their laptops, messaging other classmates, or watching random videos, can make for a more distracting learning environment.

## Takeaways

Does this mean that laptops in the classroom are evil and bad and the worst thing ever for *every* student? Well no, probably not. I'm sure some students' use of laptops is productive and supports their learning process.

But sometimes we can *think* that we're being productive, even when we're not. So if your quiz and exam performance this semester hasn't been quite as stellar as you would have hoped, this could be a good time to experiment with keeping your phone in your bag during class. And if you do use a laptop in class, maybe turn off the wifi so there's less temptation to wander off.

Because while the latest [cat vs. cucumber compilation](#) might be way more attention-grabbing than whatever your professor is teaching at the moment, only one of them is going to be relevant when it's time to take the final!

## More fun stuff

[Why can't we multitask?](#) @SciShow

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### References

Glass, A. L., & Kang, M. (2018). Dividing attention in the classroom reduces exam performance. *Educational Psychology, 39*(3), 395-408.

### Date Created

April 2019