

Prohibition on Student Use of Electronic Devices in the Classroom¹

Prof. Murphy

I have two principal reasons for prohibiting electronic devices in the classroom, both reasons rooted in several empirical studies.

Reason # 1: Studies Repeatedly Have Shown that Student Usage of Electronic Devices in Class Has Adverse Consequences for Conceptual Learning and Academic Performance

Numerous empirical studies show that student laptop use in the classroom negatively affects students' conceptual learning and academic performance. For example, in an article in which I was a co-author, we reported the results of our study at RWU Law as follows:

“We compare the academic performance of handwriters to laptop users in two required, doctrinal courses as well as the effect of exposing roughly half the students in our analysis to a memorandum explaining the possible pitfalls of using a laptop to take class notes. *We find that handwriting class notes has a positive and statistically significant impact on academic performance in these two law school courses, supporting findings of the benefits of handwriting class notes in other higher education settings.*”

Murphy, Ryan, & Warnapala, *Note-Taking Mode and Academic Performance in Two Law School Courses*, 68 JOURNAL OF LEGAL EDUCATION 207 (2019) (describing several classroom studies at other higher education institutions finding negative academic effects of laptop usage in the classroom and reporting results of our RWU study).

Students who take class notes by hand rather than on electronic devices are better at integrative and conceptual learning and perform better academically for two main reasons:

1. Note taking on electronic devices facilitates *verbatim* note taking, which is detrimental to conceptual and integrative learning.

Laptop users, even if they are using their laptops solely for class note taking, tend to take notes verbatim, which undermines “encoding” and conceptual learning.²

- *Handwriters, because they take notes more slowly than laptop users*, must think actively in the moment about what is most essential to write down and must paraphrase it—this is the process of “encoding,” which greatly facilitates conceptual learning and retention.
- Trying to take notes verbatim decreasing the ability of the student to think actively and critically during class. (In the study of law, active and critical thinking are of utmost importance.)
- Advising laptop users not to take notes verbatim did not, in a highly cited study, prevent the laptop users from taking notes in a deleterious fashion.³

¹ As mentioned in the course information memo, students entitled to accommodation to use a laptop in the classroom and wish to do so should both inform me and request an accommodation from Dean Lalli.

² Pam A. Mueller & Daniel M. Oppenheimer, *The Pen Is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking*, Psychological Science (April 2014).

³ Pam A. Mueller & Daniel M. Oppenheimer, *The Pen Is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking*, Psychological Science (April 2014). The studies recounted in this article involved students at Princeton University.

2. Electronic devices entice multitasking or task switching.⁴

- One study showed that when law students use laptops in class, 90% go online for at least five minutes, and approximately 60% are distracted for approximately half the class.⁵
- The distractions associated with laptop use have been called by one expert as “biologically impossible to resist.”⁶

Reason # 2: Students’ Use of Laptops in the Classroom Negatively Affects Not Only Laptop Users’ Academic Performance, But Also the Academic Performance of Students Who Choose to Handwrite Their Class Notes

- A Rutgers classroom study showed that not only did students who used electronic devices on “device-approved days” degrade their own academic performance, but it also degraded the academic performance of students who chose to handwrite their class notes.
- A West Point classroom study showed that average performance on the final exam was lower for students in sections that permitted computing devices than for students in sections that prohibited computing devices.

You and your fellow students are expending much time, money, and effort for a legal education, and these studies suggest that prohibition of student use of electronic devices in the classroom will improve learning, on average, for all. In addition, I suggest that you not even *bring* a smartphone to the classroom, based on recent research suggesting the mere presence of a smartphone in a room impairs cognition.⁷

⁴ See, e.g., Robin H. Kay & Sharon Lauricella, *Exploring the Benefits and Challenges of Using Laptop Computers in Higher Education Classrooms: A Formative Analysis*, 37 Can. J. Learning & Tech. 1 (2011); James M. Kraushaar & David C. Novak, *Examining the Effects of Student Multitasking with Laptops During the Lecture*, 21 J. Info. Systems Educ. 241 (2010); Richard Skolnick & Mia Puzo, *Utilization of Laptop Computers in the School of Business Classroom*, 12 Acad. Educ. Leadership J. 1 (2008); Jeffrey Sovern, *Law Student Laptop Use During Class for NonClass Purposes: Temptation v. Incentives*, 51 U. Louisville L. Rev. 483 (2013).

⁵ Jeffrey Sovern, *Law Student Laptop Use During Class for NonClass Purposes: Temptation v. Incentives*, 51 U. Louisville L. Rev. 483 (2013).

⁶ Clay Shirkey, *Why I Just Asked My Students to Put Their Laptops Away*, medium.com, September 8, 2014.

⁷ *Having Your Smartphone Nearby Takes a Toll on Your Thinking*, HARVARD BUSINESS REVIEW (March 20, 2018) (“Our research suggests that . . . the mere presence of our smartphones is like the sound of our names — they are constantly calling to us, exerting a gravitational pull on our attention. . . . Attempts to block or resist this pull takes a toll by impairing our cognitive abilities. In a poignant twist, then, this means that when we are *successful* at resisting the urge to attend to our smartphones, we may actually be undermining our own cognitive performance. . . . With these findings in mind, students, employees, and CEOs alike may wish to maximize their productivity by defining windows of time during which they plan to be separated from their phones, allowing them to accomplish tasks requiring deeper thought. . . .”).