

BEND IT LIKE BECKHAM? USING COGNITIVE SCIENCE TO INFORM ONLINE LEGAL RESEARCH AND WRITING PEDAGOGY DURING THE PANDEMIC

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I. INTRODUCTION

When the pandemic hit law schools last spring, legal writing professors, like educators everywhere, had to quickly pivot from teaching in classrooms the way we always had done to delivering those same lessons from behind a computer screen sitting at our desks.¹ Fortunately, by the time in-person classes were suspended in the spring, there were only a few weeks left in the semester.² Thus, we could muddle through those last few classes using Zoom or some other videoconferencing platform without committing

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1. See Ira Steven Nathenson, *Teaching Law Online: Yesterday and Today, But Tomorrow Never Knows*, 65 ST. LOUIS UNIV. L.J. (forthcoming 2021) (manuscript at 3–4), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=3731103. Some are indeed referring to this as the “pandemic pivot.” See *id.* (manuscript at 3).

2. See *id.* (manuscript at 21).

too much educational malpractice owing to our lack of experience teaching in that way.³ By that point in the school year, we knew our students well, they knew us, and they understood our expectations.* If the last few weeks of class were not always a model of good online pedagogy, we were still able to get our students across the finish line adequately enough under the circumstances.⁴

But as spring turned to summer, it became abundantly clear that the pandemic was not going away anytime soon.⁵ We faced the prospect of teaching a full year entirely online, but this time, with brand new, completely unseasoned first-year law students.⁶ For many legal writing professors, myself included, the prospect of that felt daunting because of the hands-on nature of many of the skills we teach.* To take a small example, under normal circumstances, I still take my students into the law library in the fall to show them the digests and regional reporters so that when we learn about online research, they have a deeper understanding of how the electronic databases are organized and work.* But as the fall semester approached, I was uncertain about how I would adapt several of the lessons I felt confident teaching in a classroom to a videoconferencing platform.*

3. *See id.* (manuscript at 20, 21); Colleen Flaherty, *Not 'Glorified Skype'*, INSIDE HIGHER ED (Aug. 27, 2020), <http://www.insidehighered.com/news/2020/08/27/teaching-fall-not-glorified-skype> (finding “emergency remote teaching” is perceived as “inferior to face-to-face” teaching by some); George Orlov et al., *Learning During the Covid-19 Pandemic: It is not Who You Teach But How You Teach 2* (NAT’L BUREAU OF ECON. RSCH., Working Paper No. 28022, 2020), <http://www.nber.org/papers/w28022> (finding that students performed worse during the Spring 2020 semester in emergency online remote courses compared to similar pre-pandemic courses).

4. *See* Yvonne M. Dutton & Margaret Ryznar, *Law School Pedagogy Post Pandemic: Harnessing the Benefits of Online Teaching*, J. LEGAL EDUC. (forthcoming 2021) (manuscript at 4) (on file with authors), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=3717987 (noting that “emergency remote teaching” in Spring 2020 was perceived as substandard by some).

5. Nathenson, *supra* note 1 (manuscript at 24).

6. *Id.* (manuscript at 26). In response to the pandemic, some classes at NSU have been held under what the school calls its “BlendFlex” model which permits students to attend classes in person or at home synchronously via Zoom. *Blendflex Courses*, NSU FLA., <http://www.nova.edu/lec/blendflex.html> (last visited May 12, 2021). Due to administrative concerns over whether there would be enough classroom space to hold every BlendFlex class in conformity with social distancing guidelines, some courses have been offered exclusively online including NSU’s legal research and writing program. *See id.*; E-mail from Debra Moss Vollweiler, Assoc. Dean for Acad. Aff., Nova S.E. Univ. Shepard Broad Coll. of L., to Students of Nova S.E. Univ. Shepard Broad Coll. L. (June 26, 2020) (on file with the Nova Southeastern University Shepard Broad College of Law). Those classes are held as live, synchronous Zoom sessions. E-mail from Debra Moss Vollweiler to Students, *supra*.

Despite having spent the last few weeks of the previous semester teaching with Zoom and my prior experience teaching in our law school's online Masters of Law program, I felt neither proficient with Zoom nor confident enough about online pedagogy in general to teach a year-long legal skills course that way.⁷ Consequently, over the summer, I found myself asking the questions I presume many other colleagues were also asking themselves: How can I be an effective Legal Research and Writing ("LRW") teacher on Zoom?⁸ Does Zoom, and similar videoconferencing platforms, require a new type of pedagogy, teaching style, or method compared to how I am used to teaching in a classroom?⁹ Do I need to change the way I teach to fit this new platform?¹⁰ If so, what changes should I make?* Essentially, many of us were asking: Do I bend the way I teach to

7. See *Overcoming My Existential Dread of Teaching Online: Developing Virtual Class Culture*, ELLEN ENSHER, <http://ellenensher.com/overcoming-my-existential-dread-of-teaching-online-developing-virtual-class-culture/> (last visited May 12, 2021). Though I spent two years teaching in NSU's online Masters of Law program, that experience was a lot different than teaching law students in a J.D. program. See *id.* Among the reasons, the lecture method works well for students in the non-J.D. program but not for law students. *Id.*

8. See *William & Mary Conference for Excellence in Teaching Legal Research & Writing Online*, WM. & MARY L. SCH., http://law.wm.edu/academics/intellectuallife/conferencesandlectures/excellence_online_teaching/index.php (last visited May 12, 2021).

9. See Flaherty, *supra* note 3 (during spring 2020 professors express fear about "transitioning to a radically different way of teaching."); *Socratic Zooming: Faculty Weigh in on Teaching Remotely*, COLUM. L. SCH., (Apr. 27, 2020), <http://www.law.columbia.edu/news/archive/socratic-zooming-faculty-weigh-teaching-remotely#:~:text=Online%20instruction%20means%20working%20harder,finding%20ways%20to%20do%20so.&text=We%20asked%20faculty%20members%20to,the%20experience%20of%20teaching%20remotely> (law professor explaining you must learn to teach differently using an online platform like Zoom); Doug Lederman, *The Shift to Remote Learning: The Human Element*, INSIDE HIGHER ED (Mar. 25, 2020), <http://www.insidehighered.com/digital-learning/article/2020/03/25/how-shift-remote-learning-might-affect-students-instructors-and> (several professors discussing whether the switch to online teaching due to the pandemic requires different teaching methods or instead merely adapting traditional methods to a new modality); Beckie Sapiano, *Why You Shouldn't Try to Replicate Your Classroom Teaching Online*, THE CHRON. OF HIGHER EDUC. (Apr. 30, 2020), <http://www.chronicle.com/newsletter/teaching/2020-04-30> (discussing tension between reproducing in-person teaching methods to an online platform versus adapting them to the platform); *Pedagogical Considerations for Teaching with Zoom*, CARNEGIE MELLON UNIV., <http://www.cmu.edu/canvas/teachingonline/zoom/zoompedagogy.html> (last visited May 12, 2021) (discussing how Zoom allows you to implement many of the same teaching strategies you use in a face-to-face classroom).

10. See DAN LEVY, *TEACHING EFFECTIVELY WITH ZOOM* 22 (2d ed. 2021) (stating that principles of good teaching should drive the use of classroom technology not the other way around).

fit the way Zoom works, or instead do I bend Zoom to fit the way I would ordinarily teach if I were still in a classroom?*

By now, we have a vaccine and know the pandemic will eventually end.¹¹ Yet, the questions raised in this article will continue to be relevant in the years ahead.¹² First of all, as a practical matter, distribution of the vaccine has encountered many unanticipated problems, and it is taking longer than expected to inoculate everyone.¹³ Though it is a rapidly evolving situation, public health officials warn that we may not be out of the woods for another year or longer.¹⁴ That means many of us could still be teaching remotely via Zoom next fall too.¹⁵

Apart from that, there are other, more substantive reasons why Zoom is almost certainly here to stay even after the pandemic ends.¹⁶ Despite nearly everyone complaining about it and saying how much they cannot wait to get back into a real classroom again, most have nonetheless found at least something about Zoom they like.¹⁷ Students certainly like the convenience of taking courses online from the comfort of their homes.¹⁸ As a result, there will be pressure on law schools to retain it just for that reason alone.¹⁹ Similarly, most professors have also found at least something about Zoom they like as well, and will undoubtedly be incorporating it into their classes moving forward.²⁰ As for myself, I have found Zoom to be a very effective

11. Matthew Conlen et al., *Why Vaccines Alone Will Not End the Pandemic*, N.Y. TIMES (Jan. 24, 2021), http://www.nytimes.com/interactive/2021/01/24/us/covid-vaccine-rollout.html?campaign_id=2&emc=edit_th_20210126&instance_id=26407&nl=todaysheadlines®i_id=39947980&segment_id=50254&user_id=d884a7719cd581ed1f57c7322482fee.

12. *See id.*; discussion *supra* Part I.

13. Conlen et al., *supra* note 11.

14. *Id.* Though recent reports about new strains and mutations of the virus bring disturbing predictions that new outbreaks may be with us for a long while. *Id.*

15. *See id.*

16. James B. Levy, *Some Observations About Conducting Student Conferences via Zoom During a Pandemic*, LEGAL SKILLS PROF BLOG (Nov. 12, 2020), http://lawprofessors.typepad.com/legal_skills/2020/11/some-observations-about-student-conferences-via-zoom-during-a-pandemic.html.

17. Sara Rimer, *BU Students: Zoom vs In-Person Classes? It's Complicated*, BU TODAY (Nov. 9, 2020), <http://www.bu.edu/articles/2020/students-learn-from-anywhere>.

18. *See id.* (stating that students say they learn better in a physical classroom but like the convenience of taking classes online).

19. *See id.*

20. *See Socratic Zooming: Faculty Weigh in on Teaching Remotely*, *supra* note 9 (discussing aspects of teaching by Zoom that several Columbia law professors really like compared to their classroom counterparts); Viet Thanh Nguyen, *I Actually Like Teaching On Zoom*, N.Y. TIMES OP. (Feb. 15, 2021), <http://www.nytimes.com/2021/02/15/opinion/zoom-video-school-teaching.html> (discussing

way to hold individual student writing conferences.²¹ While I am among those who cannot wait to get back into a real classroom again, at the very least, I will likely continue to use Zoom to offer virtual writing conferences once the pandemic ends.²²

I would therefore expect that many LRW professors may adopt a hybrid approach to their courses moving forward by combining the best aspects of in-person instruction with other portions of the course being delivered online.²³ This means that the questions raised in these pages about how to best teach LRW using Zoom and similar videoconferencing platforms will continue to be relevant.²⁴

This article begins by discussing a topic that is key to good videoconferencing pedagogy but seems to have received scant attention: How choosing the right tech gear can both enhance the production qualities of our Zoom classes while also easing the burden on professors to juggle the myriad technical and logistical tasks it takes to teach each class.²⁵ Next, this article discusses how we can use cognitive science to inform our decisions about how best to teach LRW using Zoom.²⁶ Given that many of us had to quickly pivot from teaching the course in a familiar way, from inside a classroom, to teaching it in a completely unfamiliar way, using a videoconferencing platform, cognitive science is an especially helpful source of guidance under the circumstances because it provides an objective, research-based approach for identifying the best methods and techniques to

several advantages of teaching by Zoom over the classroom); Nathenson, *supra* note 1 (manuscript at 23).

21. See discussion *infra* Part III; Levy, *supra* note 16. Though I was not expecting to feel that way, I found that meeting with my LRW students for one-on-one, individual writing conferences via Zoom was a very effective use of the platform. Levy, *supra* note 16. Perhaps it is because we face each other on Zoom to go over papers, rather than sitting side-by-side as we would meeting in my office, or because by bringing the student's paper up on the screen we could both review and edit comments together, the interaction felt even more direct, immediate, and effective than the ones that take place in-person in my office under normal circumstances. See *id.*

22. *Id.*

23. See *id.*; Olympia Duhart et al., *Tips, Tricks, and Gimmicks: Short Ideas from Attendees of the William & Mary Conference for Excellence in Teaching Legal Research & Writing Online*, WM & MARY L. SCH. SCHOLARSHIP REPOSITORY (Jan. 1, 2020, 12:00 AM), http://scholarship.law.wm.edu/cgi/viewcontent.cgi?article=1031&context=excellence_online_teaching.

24. See discussion *infra* Parts II–IV; James B. Levy, *Caveman Teaching in the Time of Covid*, LEGAL SKILLS PROF BLOG (Sept. 7, 2020), http://lawprofessors.typepad.com/legal_skills/2020/09/caveman-skills-teaching-in-the-time-of-covid.html.

25. See discussion *infra* Part II.

26. See discussion *infra* Part III.

employ when teaching with Zoom.²⁷ In short, it suggests an approach that leverages some of the unique features of Zoom that are compatible with good pedagogy together with the time-tested teaching methods that have traditionally worked well for us in the classroom.²⁸

II. “LIGHTS, CAMERA, ACTION!” CHOOSING THE RIGHT EQUIPMENT TO ENHANCE THE QUALITY AND MANAGEABILITY OF OUR ZOOM CLASSES

The relationship between good classroom design and learning outcomes is self-evident.²⁹ Small considerations like the room temperature, air flow, wall color and even the artwork on the walls, never mind the more significant ones like comfortable seating, the floorplan, acoustics, and classroom technology, can all contribute to creating a positive learning environment for students.³⁰ Though a well-designed classroom, by itself, can never ensure that students will learn, a poorly designed one will almost certainly increase the prospect that they will not.³¹ It stands to reason that the same should hold true for the online learning environment we establish through Zoom.³² In fact, because streaming video lessons over the internet arguably results in a far more circumscribed learning environment, compared to being in a physical classroom with other students, it suggests we should

27. See *id.*; James B. Levy, *Teaching the Digital Caveman: Rethinking the Use of Classroom Technology in Law School*, 19 CHAP. L. REV. 241, 255–56 (2016).

28. See discussion *infra* Part III; *Pedagogical Considerations for Teaching with Zoom*, *supra* note 9.

29. See *How Does Classroom Design Affect Student Learning?*, ENVOPLAN, <http://envoplan.co.uk/education-news/how-does-classroom-design-affect-student-learning> (last visited May 12, 2021).

30. *Id.*; see also Bradley Emerling, *Lessons Learned from a Chalkboard: Slow and Steady Technology Integration*, LARRY CUBAN ON SCH. REFORM & CLASSROOM PRAC. (Apr. 26, 2015, 1:00 AM), <http://larrycuban.wordpress.com/2015/04/26/lessons-learned-from-a-chalkboard-slow-and-steady-technology-integration-bradley-emerling/> (stating that studies show green colored chalkboards help students concentrate better than whiteboards); Sapna Cheryan et al., *Designing Classrooms to Maximize Student Achievement*, 1 POL’Y INSIGHTS FROM BEHAV. & BRAIN SCIS. 4, 8, 9 (2014) (changing portraits hanging in a classroom affected student in-class learning behaviors).

31. See Cheryan et al., *supra* note 30, at 4, 6.

32. See *id.* Some studies have found greater student engagement based on in-class video quality or streaming webcam resolution. See Bernadette Gold & Julian Windscheid, *Observing 360-Degree Classroom Videos — Effects of Video Type on Presence, Emotions, Workload, Classroom Observations, and Ratings of Teaching Quality*, COMPUT. & EDUC., Oct. 2020, at 1–3; Anna B. Newcomb et al., *Building Rapport and Earning the Surgical Patient’s Trust in the Era of Social Distancing: Teaching Patient-Centered Communication During Video Conference Encounters to Medical Students*, 78 J. SURGICAL EDUC. 336, 337 (2021).

think more, not less, about how the characteristics of that space may affect the learning experience for students.³³

And though many professors are content relying on their university-issued laptops for class, there are a few easy and inexpensive hardware upgrades that could make our Zoom classes a bit more engaging and effective for students.³⁴ More importantly, these upgrades can reduce the amount of multitasking professors must now do to juggle the myriad technical and logistical tasks it takes to teach each Zoom class.³⁵ If professors are able to reduce the amount of cognitive capital they must spend on these tasks, they will have much more left over to actually teach the class and engage with students.³⁶ Even if these suggestions only make a small contribution to reducing the cognitive load required to manage the technical aspects of producing each Zoom session, it is a worthwhile investment given the low cost and ease of implementation.³⁷

33. See Nathenson, *supra* note 1 (manuscript at 7) (noting how PowerPoint is a flat, “two-dimensional” learning experience for students); discussion *infra* Part II (acknowledging how camera resolution and quality of videos affect Zoom classes); Gold & Windscheid, *supra* note 32, at 7, 10; Robby Nadler, *Understanding ‘Zoom Fatigue’: Theorizing Spatial Dynamics as Third Skin in Computer-Mediated Communications*, COMPUTS. & COMPOSITION, Oct. 2020, at 1, 14 (noting that Zoom is exhausting because it “flatten[s]” human interaction and thus requires more energy to communicate and relate to others).

34. Duhart et al., *supra* note 23.

35. See *id.*; Levy, *supra* note 16; Nathenson, *supra* note 1 (manuscript at 7) (noting how PowerPoint is a flat, “two-dimensional” learning experience for students); Gold & Windscheid, *supra* note 32, at 7, 10; Nadler, *supra* note 33, at 1, 14 (noting that Zoom is exhausting because it “flatten[s]” human interaction and thus requires more energy to communicate and relate to others).

36. See Cheryan et al., *supra* note 30, at 6.

37. See *id.*; Kathryn Whinton, *Minimize Cognitive Load to Maximize Usability*, NIELSON NORMAN GRP. (Dec. 22, 2013), <http://www.nngroup.com/articles/minimize-cognitive-load/>; Susan D. Blum, *Why We’re Exhausted by Zoom*, INSIDE HIGHER ED (Apr. 22, 2020), <http://www.insidehighered.com/advice/2020/04/22/professor-explores-why-zoom-classes-deplete-her-energy-opinion> (discussing that faculty report the increased cognitive load due to the amount of multitasking required to manage each class is one of the most exhausting aspects of teaching with Zoom); Manyu Jiang, *The Reason Zoom Calls Drain Your Energy*, BBC: REMOTE CONTROL (Apr. 22, 2020), <http://www.bbc.com/worklife/article/20200421-why-zoom-video-chats-are-so-exhausting>; Ray Schroeder, *Zoom Fatigue: What We Have Learned*, INSIDE HIGHER ED (Jan. 20, 2021), <http://www.insidehighered.com/digital-learning/blogs/online-trending-now/zoom-fatigue-what-we-have-learned> (“Zoom fatigue is a recognized condition.”).

Teachers at every level, from grade to graduate school, have reported feeling mentally exhausted by the end of each Zoom session.³⁸ Part of that may be due to the extra planning involved to develop new lesson plans that are compatible with a videoconferencing platform.³⁹ But it is also in large part due to the additional cognitive bandwidth consumed by each class managing the multitude of technical and logistical tasks necessary to teach a synchronous Zoom session.⁴⁰ That may be even more true in an LRW class because of the further challenges associated with trying to teach hands-on legal skills through a computer screen.⁴¹

Among the many course management tasks professors must now routinely handle as part of each Zoom session include the organizing and displaying of all files, PowerPoints, screen-shares and other electronic visual aids, checking the chat-box for student questions, responding to those questions, and troubleshooting the myriad technical glitches that seem to arise in every class.⁴² All of that is in addition to actually teaching the class while also trying to interact and engage with students.⁴³ And none of it seems to get any easier with time or experience.⁴⁴ Rather, each Zoom class plan seems to take far more time and energy to “produce” and execute than the comparable tasks would take in a regular classroom.⁴⁵

Another factor contributing to the feeling of exhaustion many are experiencing is that we are working much harder to read the body language and other nonverbal cues from students that tell us whether they are following the material or instead are lost and confused.⁴⁶ Some faculty have

38. See Blum, *supra* note 37; Natasha Singer, *U.S. Faces a New Crisis: ‘An Extreme Level of Teacher Burnout’*, N.Y. TIMES, Dec. 1, 2020, at A9 (describing experience of several grade-school teachers who feel overwhelmed by the challenges of teaching with Zoom); Schroeder, *supra* note 37.

39. See Blum, *supra* note 37 (reporting teaching via Zoom in general as exhausting compared to its classroom counterpart); Flaherty, *supra* note 3 (describing “work[ing] countless . . . hours” to prepare to teach with Zoom in the fall); Singer, *supra* note 38, at A9 (interviewing grade school teachers describing exhaustion and burn-out due to the extra demands of teaching with Zoom).

40. See Blum, *supra* note 37; Lederman, *supra* note 9.

41. *William & Mary Conference for Excellence in Teaching Legal Research & Writing Online*, *supra* note 8; Levy, *supra* note 16.

42. Levy, *supra* note 24; see also Blum, *supra* note 37.

43. See Blum, *supra* note 37; Schroeder, *supra* note 37; Levy, *supra* note 24.

44. Levy, *supra* note 24.

45. *Id.*

46. See Blum, *supra* note 37; Schroeder, *supra* note 37; Daniel Willingham, *Op-Ed: Why Remote Learning is Hard — And How to Make it Easier*, L.A. TIMES: OP. (Sept. 18, 2020, 3:00 AM), <http://www.latimes.com/opinion/story/2020-09-18/remote-learning-hard-make-easier> (stating Zoom is exhausting because everyone is working harder to read the nonverbal social cues that are an essential part of all conversations).

written about how exhausting they find teaching on Zoom just because of the difficulty in reading these subtle cues, which are an inherent and essential part of all human communication.⁴⁷ Insofar as we are feeling mentally depleted, it means we have less cognitive capital left to spend teaching the class.⁴⁸ If a few simple and inexpensive hardware upgrades can even partially address this, it is well worth considering.⁴⁹

The best place to start may be by adding a second monitor to your Zoom set-up.⁵⁰ Doing so lets you use one monitor to manage all the files, PowerPoints, screen-shares, and other electronic visual aids needed for class, while the other can be used to hold the video gallery of your students.⁵¹ I have found that adding a second monitor has made it exponentially easier to teach the class while simultaneously scanning the faces of my students to assess their engagement and understanding.⁵² For two semesters now, I have taught both a synchronous LRW course via Zoom from my office using a dual-monitor configuration while also teaching a non-LRW synchronous “BlendFlex” class via Zoom from a classroom using a single monitor configuration.⁵³ The difference between the two with respect to my ability to manage the technical aspects of class while simultaneously teaching and interacting with students is like night and day.⁵⁴

For me, a two-monitor configuration also makes a Zoom class feel a bit closer to the experience of being in a physical classroom with my students as it more closely approximates the natural rhythm and flow of presenting

47. See Singer, *supra* note 38, at A9; Blum, *supra* note 37; Schroeder, *supra* note 37 (“Zoom is exhausting and lonely because you have to be so much more attentive and so much more aware of what’s going on . . .”).

48. See Blum, *supra* note 37.

49. See Duhart et al., *supra* note 23; R. Dallan Adams, *9 Tech Tools Designed to Make Online Learning Better for Students and Teachers*, TECH REPUBLIC (July 21, 2020, 10:11 AM), <http://www.techrepublic.com/article/9-tech-tools-designed-to-make-online-learning-better-for-students-and-teachers/>.

50. See Duhart et al., *supra* note 23.

51. See *Remote Teaching Setup for Faculty’s Home and Office*, DARTMOUTH: SERVS. PORTAL (Aug. 31, 2020, 4:26 PM), <http://services.dartmouth.edu/TDCClient/1806/Portal/KB/ArticleDet?ID=112986>; Levy, *supra* note 24.

52. See Duhart et al., *supra* note 23. This is especially helpful in a small enrollment class like LRW where one of the monitors can hold the entire student video gallery on a single screen page. See *id.*; Levy, *supra* note 16.

53. See *Blendflex Courses*, *supra* note 6. NSU’s BlendFlex model is a synchronous class held live in a classroom in accordance with social distancing policies where students have the option of either attending in-person or remotely. See *id.* By comparison, all of NSU’s LRW classes this year are being taught synchronously entirely online with no option for students to attend in person. See Levy, *supra* note 24; cf. *Blendflex Courses*, *supra* note 6.

54. See Levy, *supra* note 24; Levy, *supra* note 16.

material while interacting with students.⁵⁵ And because using a second monitor has made it easier to manage all the technical tasks required to produce each class, I feel like I've been able to reduce the dead-spots and long pauses that have interrupted the flow of my BlendFlex classes as I search for files, change screen-shares, troubleshoot technical glitches, and handle chat questions from students.⁵⁶ In fact, I feel so strongly about the difference in quality between my two courses that adding a second monitor has made, that when my university asked for faculty feedback about ways it could improve its Blendflex model, I said that adding a second monitor in every classroom with a smart-podium is the single biggest improvement they could make.⁵⁷

A related recommendation is to use a desktop computer to conduct your Zoom classes rather than a laptop.⁵⁸ If you still want to use a laptop, consider getting a docking station.⁵⁹ Doing so will free-up valuable desk space that you can use to add some additional videoconferencing hardware that can make Zoom classes easier to manage.⁶⁰ For instance, adding a standalone microphone and webcam means you no longer have to remain physically tethered to your computer for the duration of a long class.⁶¹ It gives you a little more freedom to move about when you teach, incorporate a whiteboard (I use a real one, not Zoom's digital version) and other physical

55. See Duhart et al., *supra* note 23; Levy, *supra* note 24; Levy, *supra* note 16.

56. See *In-Depth Guide: Use Zoom to Teach Online*, HARV. UNIV. INFO. TECH., http://harvard.service-now.com/ithelp?id=kb_article&sys_id=4c3290f6db5b845430ed1dca4896197f (last updated Dec. 15, 2020); Levy, *supra* note 24; *Blendflex Courses*, *supra* note 6; Duhart et al., *supra* note 23; Levy, *supra* note 16.

57. See Levy, *supra* note 16; *Blendflex Courses*, *supra* note 6.

58. See Adil Vellani, *6 Best Computers for Online Teaching in 2021*, ESL JOB EXCH., <http://www.esljobexchange.com/best-computers-for-online-teaching/> (last visited May 12, 2021). By putting the computer box, or laptop and docking station, off to the side or underneath the desk, it frees up valuable desk space for a couple of monitors, a keyboard and mouse, standalone microphone, and any other supplemental gear you want to add while still leaving space for a writing pad, lesson plan notes, and a hot cup of joe (black). See *id.*; Patrick Otundo, *Uses and Benefits of a Laptop Docking Station*, TECHPRODUCTTEACHER (Nov. 29, 2020), <http://techproductteacher.com/benefits-of-a-laptop-docking-station/>.

59. See Otundo, *supra* note 58.

60. See *id.*; *Work-from-Anywhere Hardware*, ZOOM, <http://support.zoom.us/hc/en-us/articles/360045396231-Work-from-anywhere-hardware> (last visited May 12, 2021).

61. See *Work-from-Anywhere Hardware*, *supra* note 60; Dave Johnson, *8 Ways to Improve Your Audio Quality on Zoom, From Calibrating Your Microphone to Optimizing Your Connection*, BUS. INSIDER (Oct. 13, 2020, 12:01 PM), <http://www.businessinsider.com/how-to-imrpove-zoom-audio-quality>.

teaching aids or props you'd like to work into class.⁶² Even if being untethered from your computer makes you feel only slightly more relaxed and comfortable in class, the students will feel that too, and it can translate into a better class experience for everyone.⁶³

Once freed from your laptop by a docking station, you can add a larger, more ergonomic keyboard and mouse.⁶⁴ That may make it easier, if only in a small way, to multitask during class compared to having to use the fiddly ones built-in to most laptops.⁶⁵ Admittedly, this a small refinement, but anything that helps reduce the cognitive load needed to juggle all the technical aspects of managing each Zoom session means the professor has more available to actually teach.⁶⁶

Zoom is essentially a two-channel communication medium using an audio and video feed.⁶⁷ Therefore, the quality of those feeds is not an insignificant consideration when it comes to the overall quality of each Zoom session.⁶⁸ As the cost is slight, why not also upgrade from the generally poor quality, built-in microphone that comes with most computers to a better, more versatile desktop model.⁶⁹ A common complaint about videoconferencing is the poor sound quality and dropouts that affect the

62. Levy, *supra* note 24.

63. See James B. Levy, *As a Last Resort, Ask the Students: What They Say Makes Someone an Effective Law Teacher*, 58 ME. L. REV. 50, 64 (2006). It is a version of the old classroom adage that if you want your students to be interested in the material, be more interested yourself. See *id.* at 51–52. Social scientists refer to this phenomenon as “emotional contagion,” which reflects the empirically supported phenomenon that a teacher and students tend to coordinate and synchronize their emotional state of mind. *Id.* at 64. Thus, if you are excited about the material, your students will be too. *Id.* at 52. If you’re relaxed, they will tend to be as well. *Id.*; see also discussion *infra* Section III.C and n.193; Sarah Rose Cavanagh, *How To Play in the College Classroom in a Pandemic, and Why You Should*, THE CHRON. OF HIGHER EDUC. (Feb. 9, 2021), <http://www.chronicle.com/article/how-to-play-in-the-college-classroom-in-a-pandemic-and-why-you-should> [hereinafter *How To Play in the College Classroom in a Pandemic, and Why You Should*] (discussing how the emotional climate of the classroom energizes and motivates students); Sarah Rose Cavanagh, *How to Make Your Teaching More Engaging*, THE CHRON. OF HIGHER EDUC. (Mar. 11, 2019), <http://www.chronicle.com/article/how-to-make-your-teaching-more-engaging/> [hereinafter *How to Make Teaching More Engaging*] (describing classroom phenomenon of emotional contagion).

64. See Otundo, *supra* note 58.

65. See *id.*

66. See *id.*; Whitenon, *supra* note 37; Levy, *supra* note 24.

67. Jenae Cohn & Beth Seltzer, *Teaching Effectively During Times of Disruption, for SIS and PWR*, (Mar. 17, 2020), bit.ly/stanfordteachingdisruption.

68. See Johnson, *supra* note 61.

69. See *id.*; Paul Caron, *Law Teaching in the Age of Coronavirus*, TAXPROF BLOG (Mar. 15, 2020), http://taxprof.typepad.com/taxprof_blog_2020/03/law-teaching-in-the-age-of-coronavirus.html.

students' ability to hear the teacher.⁷⁰ Buying a decent quality standalone mic can help address that.⁷¹ It is not necessary to spend a lot for an audiophile quality model since students are still listening on the cheap, built-in speakers of their laptops.⁷² But if spending \$25 to \$50 can improve the quality of sound for your class while also liberating you from having to remain in physical proximity to your computer during a long Zoom session, it makes sense to upgrade.⁷³ Get a microphone with a USB connection rather than a Bluetooth device since the latter can sometimes cause a slight audio delay and can occasionally lose connectivity.⁷⁴ I also bought a headset with a built-in mic just in case the external mic fails or students have trouble hearing me with it for any reason.* The headset is kept next to my desk so I can grab it at any time and I'm ready to go.*

Another advantage of using a standalone mic is that you can place it anywhere on your workspace to better optimize the audio characteristics of the class.⁷⁵ They also typically have a separate volume control knob which makes it easier and more intuitive to adjust while busily multitasking during class compared to using a mouse to find the digital slide control for your computer's built-in mic.⁷⁶ Again, it is a small detail but they all add up in helping to reduce the amount of attentional bandwidth consumed during each class managing all of these tasks.⁷⁷

For similar reasons, also consider adding a small pair of inexpensive desktop speakers.⁷⁸ You will get better sound quality, hear your students more easily, and it is easier to adjust the sound level during a busy class,

70. See Melanie Pinola & Kevin Purdy, *The Best USB Microphone*, WIRECUTTER: ELEC., <http://www.nytimes.com/wirecutter/reviews/the-best-usb-microphone/> (last updated Dec. 9, 2019).

71. See *id.*; Johnson, *supra* note 61.

72. See Pinola & Purdy, *supra* note 70.

73. See Johnson, *supra* note 61. With an external microphone, you're still going to hit the "join with computer audio" toggle when you open the Zoom meeting. *Id.* There are also apps available like *Krisp* which can enhance the acoustics of an external microphone by eliminating echo and background noise. See *id.*; Walter Yeates, *Remote Conference Benefit One by One*, KRISP: BLOG, <http://krisp.ai/blog/remote-conference-benefits/> (last visited May 12, 2020).

74. See Pinola & Purdy, *supra* note 70.

75. See Johnson, *supra* note 61.

76. See Pinola & Purdy, *supra* note 70.

77. John Loeffler, *The Best USB Microphones 2021: The Best Standalone Mics You Can Buy Today*, TECHRADAR (Feb. 4, 2021), <http://www.techradar.com/best/the-best-usb-microphones-2020-the-best-standalone-mics-you-can-buy-today>. I also bought a headset just in case the mic quits or students were having trouble hearing me. For about \$25, it was a very small investment that I may never use but I have it just in case.

78. See Adams, *supra* note 49.

which I find myself doing often.⁷⁹ Because students are attending class with a variety of devices that all have different microphone settings and characteristics, I frequently have to adjust my speakers to better hear some students while lowering the volume for others.⁸⁰ Reaching out to adjust the speaker's control knob is much easier than finding the digital slide adjustment on my computer using a mouse.⁸¹

Next to adding a second monitor, perhaps the most helpful upgrade is a standalone webcam mounted on a small footprint tripod that can be placed anywhere on your workspace.⁸² Just like a standalone mic, it gives you much more flexibility in terms of placement, which can improve the production qualities of your video feed.⁸³ The built-in webcams that come with most laptops are generally low resolution and set at a fixed angle that may not always be optimal for framing the video feed for each class.⁸⁴ Adding a standalone webcam with a small footprint tripod means you can adjust camera placement, height, and angle to create the best overall visual presentation for each class, as well as readjust any of those settings during class as needed.⁸⁵ Some studies have suggested that better video quality and higher resolution webcams may positively affect student engagement.⁸⁶ There are also aftermarket webcams that feature a zoom lens that can give the professor even more options and flexibility than the fixed lens, built-in webcams found in most computers.⁸⁷

As discussed in Part III, adding a freestanding webcam has let me incorporate whiteboards (real ones, not Zoom's digital version) into my class which has added an important element of physicality to my teaching, while

79. *See id.*

80. *See id.*

81. *See id.*; Nathenson, *supra* note 1 (manuscript at 28). Again, it is a small detail, but the devil is in the details when it comes to reducing the amount of multitasking required to teach each Zoom class.

82. Jefferson Graham, *Ready for Zoom: What Is the Best Camera for Video Meetings*, USA TODAY: TECH (Sept. 22, 2020, 1:52 PM), <http://www.usatoday.com/story/tech/2020/09/22/zoom-tips-how-look-great-best-camera-webcam-iphone/3476930001/>.

83. *See id.*; Gold & Windscheid, *supra* note 32, at 2.

84. *See* Gold & Windscheid, *supra* note 32, at 2.

85. *See id.*; Graham, *supra* note 82.

86. *See* Gold & Windscheid, *supra* note 32, at 3, 7, 9 (concluding that enhanced quality videos found to have "significant" impact on student presence); Newcomb et al., *supra* note 32, at 340 (stating that higher resolution webcam used in medical school patient consultation simulations resulted in better reading of patient facial affect).

87. *See* Jessica Kennedy, *4 Ways to Experience Distance Learning Through the Lens*, MY TECH DECISIONS (July 21, 2014), <http://mytechdecisions.com/mobility/distance-learning-through-the-lens/>; Graham, *supra* note 82.

also making me less dependent on electronic visual aids for class.⁸⁸ I bought a few medium-sized whiteboards that I either prepare beforehand or write on during class, which can be switched in and out using an easel next to my desk.* A standalone webcam allows me to adjust the camera angle and position to better showcase the whiteboards or any other physical props I may want to use during class.⁸⁹

The feedback from students has been good.* They appreciate that I use a mix of teaching styles and methods during class and am not so dependent on electronic files and screen-shares.* By using a variety of approaches and teaching methods, it makes each class feel more dynamic, visually interesting, and engaging.⁹⁰ Upgrading to a standalone webcam was a minor expense that has given me a lot more flexibility in my approach to each Zoom session.⁹¹ An additional benefit of using a standalone webcam and mic that I had not recognized until after I bought them is that I can prevent, with 100% assurance, any hacks or embarrassing “hot mic” moments by simply unplugging them after class.⁹²

A final consideration in designing a well-equipped Zoom classroom is to purchase some supplemental webcam lighting.⁹³ An inexpensive ring light or two is a popular choice that can help improve the production values of each class while also making you more photogenic.⁹⁴ Most of these devices come with a small desktop tripod, or it can be purchased separately, which allows for unobtrusive placement on your desk or workspace.⁹⁵ Aside from making you look better, a ring light will also help illuminate any physical props or other teaching aids you may want to use in class, like the whiteboards previously mentioned.⁹⁶ You may not need the extra lighting

88. See discussion *infra* Part III; Kennedy, *supra* note 87; Graham, *supra* note 82.

89. See Kennedy, *supra* note 87; Graham, *supra* note 82.

90. See Kennedy, *supra* note 87; Gold & Windscheid, *supra* note 32, at 3.

91. See Kennedy, *supra* note 87; Graham, *supra* note 82.

92. See David Cook, *Hackers Can Access Your Mobile and Laptop Cameras and Record You — Cover Them Up Now*, THE CONVERSATION (Apr. 16, 2020, 2:14 AM), <http://theconversation.com/hackers-can-access-your-mobile-and-laptop-cameras-and-record-you-cover-them-up-now-135933>.

93. Jefferson Graham, *Six Tips for Looking Great in a Zoom Meeting*, USA TODAY: TECH (Apr. 12, 2020, 8:22 PM), <http://www.usatoday.com/story/tech/2020/04/11/zoom-meetings-go-better-these-6-tips-look-your-best/5125980002/>.

94. See *id.*; John Scott Lewinski & Taylor Galla, *The Best Ring Light for Perfect Lighting in Zoom Meetings, Social Videos & Selfies*, SPY (Feb. 1, 2021), <http://spy.com/articles/gadgets/video-media/best-ring-lights-278323/>.

95. See Lewinski & Galla, *supra* note 94.

96. See *id.*

very often—I have not—but if students ever tell you they are having trouble seeing any of your teaching aids or props during class, it will be easy enough to shine a light on them.⁹⁷

Depending on your university's policies, most of these purchases may qualify under your faculty development funds guidelines.* If not, or like me, you also bought duplicate videoconferencing equipment to create a home Zoom studio in the event of a school building closure, the total cost is extremely reasonable.⁹⁸ Just a few hundred dollars for everything mentioned here.⁹⁹ Insofar as it improves the production qualities of your Zoom sessions, helps reduce the amount of multitasking required to manage each class, helps makes students feel more engaged, or makes your class more dynamic and interesting to watch, it is money well spent.¹⁰⁰

III. USING COGNITIVE SCIENCE TO INFORM OUR TEACHING IN THE ONLINE LEGAL RESEARCH AND WRITING CLASSROOM DURING A PANDEMIC

After upgrading your videoconferencing equipment, the next step is to consider what instructional methods may work best for teaching an online LRW course using Zoom.¹⁰¹ When the pandemic first hit, many of us had to quickly shift from teaching in a familiar way from inside a classroom to teaching in a completely unfamiliar way sitting behind our computer screens using a videoconferencing platform.¹⁰² We had little time to reflect or consider the best ways to adapt our classroom methods to Zoom so we took to listservs, blogs, and convened informal training sessions with colleagues to better understand the technology and how we might use it.¹⁰³

Cognitive science can be an especially helpful resource under these circumstances because it offers an objective, research-based approach for making decisions about how best to use Zoom to help our students learn in

97. *See id.*

98. *See* Thomas Smith, *How to Create a Professional Home Zoom Studio for Under \$200*, MEDIUM: DEBUGGER (Nov. 10, 2020), <http://debugger.medium.com/how-to-create-a-professional-home-zoom-studio-for-under-200-e60e7a224687>.

99. *See id.*

100. *See id.*; Levy, *supra* note 27 at 260.

101. *See Pedagogical Considerations for Teaching with Zoom, supra* note 9.

102. *See Transforming Legal Education While Navigating the Pandemic*, YALE L. SCH. (Dec. 2, 2020), <http://law.yale.edu/yls-today/news/transforming-legal-education-while-navigating-pandemic>.

103. *See id.* Thus the phrase “emergency remote teaching” was coined during Spring 2020 to describe the phenomenon of teachers at every level having to make the “pandemic pivot” to online teaching with little or no advanced preparation or training. *Id.*

the legal writing classroom.¹⁰⁴ It reminds us that the fundamentals of good teaching and pedagogy have not changed much over time, even if the technology used to deliver those lessons has.¹⁰⁵ What was true about good teaching before the pandemic is still true now.¹⁰⁶ We just need to find ways to implement the strategies and methods that have always worked well for us in the classroom using a videoconferencing platform.¹⁰⁷

Whether in a traditional classroom setting or teaching with Zoom, cognitive science tells us that we need to actively engage our students, employ multimodal teaching techniques, and establish a positive and supportive classroom social culture to help ensure our students' success.¹⁰⁸ Fulfilling some of these objectives using Zoom is challenging to be sure but it is also a platform that can empower our teaching in new and innovative ways that were not necessarily available to us in a traditional classroom setting.¹⁰⁹ What follows are suggestions for integrating the principles of good law school pedagogy, derived from cognitive science, with some of Zoom's unique features and functionality to help us teach LRW more effectively in an online classroom.¹¹⁰

104. See Emma García & Elaine Weiss, *COVID-19 and Student Performance, Equity, and U.S. Education Policy: Lessons from Pre-Pandemic Research to Inform Relief, Recovery, and Rebuilding*, ECON. POL'Y INST. (Sept. 10, 2020), <http://www.epi.org/publication/the-consequences-of-the-covid-19-pandemic-for-education-performance-and-equity-in-the-united-states-what-can-we-learn-from-pre-pandemic-research-to-inform-relief-recovery-and-rebuilding/>.

105. See *Transforming Legal Education While Navigating the Pandemic*, *supra* note 102.

106. See *id.*

107. See Kelsey J. Griffin, 'A Decidedly Suboptimal Set of Circumstances': *Harvard Law Professors Evaluate Online Instruction*, HARV. CRIMSON (Apr. 1, 2020), <http://www.thecrimson.com/article/2020/4/1/harvard-coronavirus-law-school-zoom/>.

108. García & Weiss, *supra* note 104. Though cognitive science provides important guidance on many aspects of good teaching, in the interests of concision and to comply with the shorter, more informal publishing guidelines for this symposium volume, I have focused on these three aspects of pedagogy which seem most relevant to transitioning from the classroom to a videoconferencing platform. Cf. Stephen L. Chew & William J. Cerbin, *The Cognitive Challenges of Effective Teaching*, 52 J. ECON. EDUC. 17, 17–18 (2020) (discussing nine challenges of effective teaching derived from cognitive science that educators should address).

109. See *Transforming Legal Education While Navigating the Pandemic*, *supra* note 102.

110. See *id.*; Karen E. Brinkley-Etzkorn, *Learning to Teach Online: Measuring the Influence of Faculty Development Training on Teaching Effectiveness Through a TPACK Lens*, INTERNET AND HIGHER EDUC., July 2018, at 28, 28 (noting that the goal of effective teacher training is to achieve integration of classroom technology with pedagogy).

A. *Finding New Ways with Zoom to Actively Engage Our Students in Class*

Good law school pedagogy has always been about actively engaging our students in the material.¹¹¹ Though a well-established principle of good teaching, cognitive science helps us better understand why it is so important.¹¹² To a cognitive scientist, the brain is essentially an information processing machine that thinks and solves problems by comparing the one before it to the ones it has seen in the past.¹¹³ In simplest terms, the brain does this based on techniques of pattern recognition.¹¹⁴ These pattern recognition tools, also known as schemas, are comprised of neurons in the brain that fire and wire together over time as the result of practice to form the relevant neural pathways.¹¹⁵ Helping students develop these neural pathways is not unlike the work it takes going to the gym to build muscles.¹¹⁶

111. See Arthur W. Chickering & Zelda F. Gamson, *Seven Principles for Good Practice in Undergraduate Education*, AM. ASS'N HIGHER EDUC. BULL., Mar. 1987, at 3, 4 (discussing active learning is a key principle of effective pedagogy); *How to Make Teaching More Engaging*, *supra* note 63 (discussing the vital importance of engaging students in the material). A recent study suggested that employing active learning strategies is even more important when it comes to teaching on Zoom. See Colleen Flaherty, *The Power of Peer Interaction*, INSIDE HIGHER ED (Nov. 3, 2020), <http://www.insidehighered.com/digital-learning/article/2020/11/03/power-active-learning-during-remote-instruction> (discussing how the use of active learning techniques is necessary to mitigate weaker learning outcomes due to migration to online learning during the pandemic); Orlov et al., *supra* note 3 (acknowledging study of seven undergraduate economic courses taught online during the Spring 2020 pandemic found learning outcomes “substantially worse” compared to pre-pandemic course offerings though instructor use of active teaching methods was significantly associated with mitigating those effects).

112. See JOHN MEDINA, *BRAIN RULES* 4, 32 (Tracy Cutchlow ed., 1st ed. 2008); STEVEN PINKER, *HOW THE MIND WORKS* 182, 210 (2009).

113. See MEDINA, *supra* note 112, at 32; PINKER, *supra* note 112, at 182, 210; Levy, *supra* note 27, at 255–60. The brain has been described as the most complex structure in the known universe. Levy, *supra* note 27, at 256 n.75. Thus, while the explanation above is a great oversimplification of how the brain solves problems, it's appropriate here given the shorter, more informal format of this symposium volume. See *id.* at 255–60.

114. DUANE F. SHELL ET AL., *THE UNIFIED LEARNING MODEL: HOW MOTIVATIONAL, COGNITIVE, AND NEUROBIOLOGICAL SCIENCES INFORM BEST TEACHING PRACTICES* 12, 22, 25–26 (2010); Levy, *supra* note 27, at 255–60.

115. Levy, *supra* note 27, at 255–60. For a more detailed explanation about how the brain transforms experience into the neural pathways that serve as the cognitive machinery of thinking, learning, and problem solving, see *id.*, at 255–60.

116. See BENEDICT CAREY, *HOW WE LEARN: THE SURPRISING TRUTH ABOUT WHEN, WHERE, AND WHY IT HAPPENS* 94 (2014). Learning requires practice and effort. See *id.* The more difficult the practice, the greater the benefits. See *id.*

Professors must leverage techniques that actively and repeatedly engage students in order to build the neural wiring needed to “think like a lawyer.”¹¹⁷

The Socratic method has become the signature law school pedagogical technique because it is an effective way to help students develop the schemas needed to read, analyze, and understand cases like a lawyer.¹¹⁸ It also happens to be a teaching method that translates very well to Zoom since the Socratic colloquy between professor and student is a good fit with a videoconferencing platform.¹¹⁹ In fact, some law professors have found that the Socratic method in certain respects may work even better on Zoom than in a traditional classroom because of the directness and intimacy of the dialog between teacher and student.¹²⁰

Nonetheless, a longstanding criticism of the Socratic method is that it only engages one or two students at a time.¹²¹ For everyone else in the classroom, learning is a vicarious experience that depends on each student’s willingness to put themselves in the shoes of the one being questioned.¹²² A criticism of Zoom is that it is much easier for students sitting at home in front of their computers to check-out and disengage from class altogether compared to being in a live classroom with their peers.¹²³ It is also harder for

117. *See id.*

118. Joseph A. Dickinson, *Understanding the Socratic Method in Law School Teaching After the Carnegie Foundation’s Educating Lawyers*, 31 W. NEW ENG. L. REV. 97, 99 (2009); *Understanding the Socratic Method of Teaching*, ABRAHAM LINCOLN UNIV. (Feb. 10, 2020), <http://www.alu.edu/alublog/understanding-the-socratic-method-of-teaching/>.

119. Kim Wright, *How the Socratic Method Translates Online*, HARV. GAZETTE (Mar. 24, 2020), <http://news.harvard.edu/gazette/story/2020/03/harvard-law-school-professor-was-prepared-for-zoom-debut/>; *Socratic Zooming: Faculty Weigh in on Teaching Remotely*, *supra* note 9.

120. *See* Jeannie Suk Gersen, *Finding Real Life in Teaching Law Online*, THE NEW YORKER (Apr. 23, 2020), <http://www.newyorker.com/culture/personal-history/finding-real-life-in-teaching-law-online> (law professor says that in some respects the Socratic method works better on Zoom); *Socratic Zooming: Faculty Weigh in on Teaching Remotely*, *supra* note 9 (noting that the Socratic method may work better on Zoom in some respects compared to in-person teaching); Nguyen, *supra* note 20 (arguing some aspects of instruction work better on Zoom than in the classroom).

121. *Understanding the Socratic Method of Teaching*, *supra* note 118.

122. *See id.*

123. *See* Audrey Williams June, *How the Pandemic Put More Strain on Students Last Fall*, CHRON. OF HIGHER EDUC. (Jan. 26, 2021), http://www.chronicle.com/article/how-the-pandemic-put-more-strain-on-students-last-fall?bc_nonce=chj334b0s4713m2n13zvm&cid=reg_wall_signup (polling of college students found that their ability to stay motivated in remote online classes during the pandemic decreased significantly in Fall 2020 and remains a major challenge for them); Orlov et al., *supra* note 3 (finding undergraduate economics students performed “substantially worse” during emergency remote learning in Spring 2020 compared to pre-pandemic classes); *Part I:*

the professor to hold each student accountable using Zoom because of the difficulty reading body language and other nonverbal cues that indicates their engagement.¹²⁴

On the other hand, Zoom has several built-in features designed to help professors actively engage every student in the class, not just a few.¹²⁵ Indeed, these interactive tools may help explain why Zoom has become the most popular videoconferencing platform with educators.¹²⁶ Among the Zoom features we can leverage in the LRW classroom to more actively engage our students throughout each class session include the chat function, nonverbal feedback (i.e., icons for “yes,” “no,” “speed-up,” and “slow-down”), meeting reactions (i.e., icons for “clap,” “thumbs-up,” “heart,” and “laugh”), polling, breakout rooms, and the ability to delegate to students hosting and screen-sharing responsibilities.¹²⁷ By incorporating some, or several, of these features into each Zoom session, we can engage every student at multiple intervals during each class perhaps better than we were able to accomplish in a physical classroom before the pandemic.¹²⁸

For example, in a small enrollment class like LRW, the chat feature is a great way to expand the effectiveness of Socratic questioning beyond one or two students at a time and instead involve everyone in the class.¹²⁹ One technique is to continue to pose questions to a handful of students as before, but now ask everyone else to post their responses in the chat-box.¹³⁰ It actively engages everyone and by picking out a few representative responses, the professor can also get valuable feedback in real-time about

What Do You Think of Zoom University?, STAN. DAILY: OPS. (May 19, 2020), <https://www.stanforddaily.com/2020/05/19/part-i-what-do-you-think-of-zoom-university/> (students report “I have never been less engaged . . . learning material than I have over Zoom”).

124. Griffin, *supra* note 107; see also Blum, *supra* note 37; *Socratic Zooming: Faculty Weigh in on Teaching Remotely*, *supra* note 9; Willingham, *supra* note 46.

125. See *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56; *Engaging Students Through Zoom*, YALE UNIV., <http://academiccontinuity.yale.edu/faculty/how-guides/zoom/engaging-students-through-zoom> (last visited May 12, 2021).

126. See *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56; *The Best (Free) Video Conferencing Software for Education and Teachers*, STEM AUDIO (Aug. 26, 2020), <http://www.stemaudio.com/the-best-free-video-conferencing-softwares-for-education/>.

127. See *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

128. See *id.*

129. See *id.*; Wright, *supra* note 119.

130. See *Pedagogical Considerations for Teaching with Zoom*, *supra* note 9; LEVY, *supra* note 10, at 73–78.

how well students are following class discussion.¹³¹ If that is too burdensome, the professor can also ask a teaching assistant, or assign someone in the class on a rotating basis, to check the chat-box and identify any questions that reflect student confusion about class discussion or areas that may need further clarification.¹³²

You can even use the chat feature to give spontaneous quizzes, mini-assessments, or ask students for feedback about the class in real-time.¹³³ Because the chat transcript can be downloaded at the end of each class, the professor can also review it later for more detailed feedback about the success of the class or use it as an assessment tool.¹³⁴ No doubt others have found even better, more creative ways to use Zoom's chat feature.¹³⁵ However, the point is to recognize that it is a great tool to actively engage students in class while also providing real-time feedback to the professor.¹³⁶ When combined with the other interactive features of Zoom, they create opportunities to actively engage students at multiple points in each class session in ways that were not always possible in a traditional classroom.¹³⁷

Zoom's "nonverbal feedback" and "meeting reaction" function is another feature that professors can use to actively engage all students at multiple intervals throughout each class session.¹³⁸ It consists of the "thumbs up," "raised hand," "clap," and similar icons that students can use to ask, or

131. *Pedagogical Considerations for Teaching with Zoom*, *supra* note 9; *Teaching with Zoom*, UNIV. OF NEV., RENO, <http://www.unr.edu/tlt/instructional-design/instructional-technology-resources/web-conferencing/zoom/best-practices> (last visited May 12, 2021).

132. *Teaching with Zoom*, *supra* note 131; *see also* LEVY, *supra* note 10, at 73–78.

133. *Teaching with Zoom*, *supra* note 131; *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56; *Pedagogical Considerations for Teaching with Zoom*, *supra* note 9.

134. *See In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

135. *See* Elizabeth Allen-Pennebaker, *Zoom Chat — What You Can Do With It And How*, CHAMPLAIN COLL. (Sep. 21, 2020), <http://clt.champlain.edu/2020/09/21/zoom-chat-what-you-can-do-with-it-and-how/>; *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

136. *See* Allen-Pennebaker, *supra* note 135; *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56 (discussing lots of creative ways to use Zoom's chat feature to actively engage students).

137. *See Pedagogical Considerations for Teaching with Zoom*, *supra* note 9. Some of my students have confirmed this by telling me they are more comfortable using Zoom's non-verbal feedback feature to respond to questions than they would be raising their hands in a physical classroom in front of their peers.

138. *See Non-verbal Feedback and Reactions*, ZOOM, <http://support.zoom.us/hc/en-us/articles/115001286183-Non-verbal-feedback-and-reactions-> (last visited May 12, 2021).

respond, to questions from the professor.¹³⁹ It is the online equivalent of scanning the classroom for body language indicating that students are following the discussion or instead are lost or confused.¹⁴⁰ An advantage of the non-verbal feedback function is that it may do a better job engaging quiet, shy, or reticent students who may be more likely to participate this way than raising their hands in a live classroom in front of their peers.¹⁴¹ It is also a more accurate way to determine if students are following along than relying on body language and other nonverbal cues, which can be ambiguous and easy to misinterpret.¹⁴² By utilizing both the chat and non-verbal feedback functions at appropriate intervals during class, the professor can gauge student comprehension at key points throughout a Zoom session, perhaps better than we could do in a physical classroom before the pandemic.¹⁴³

Zoom's "polling" feature is yet another tool designed to actively engage students during class, perhaps more effectively than we could do in a traditional classroom.¹⁴⁴ While many popular course-hosting platforms like *Westlaw*, *Blackboard*, or *Canvas* also have a polling or quiz feature, Zoom's version is arguably better because students are already logged in by virtue of their participation in class.¹⁴⁵ Using those other platforms under normal conditions means students would have to first find the website, then log in, while there would be some who undoubtedly encounter technical problems that prevented their participation.* Zoom's polling feature also displays the results immediately on everyone's screen, which provides instant feedback for both students and the professor.¹⁴⁶ Another suggestion is to use the polling feature to solicit feedback from students in real-time about the helpfulness of class so the professor can make appropriate adjustments.¹⁴⁷

139. *Id.*; *Pedagogical Considerations for Teaching with Zoom*, *supra* note 9.

140. *See Pedagogical Considerations for Teaching with Zoom*, *supra* note 9.

141. *See Teaching with Zoom*, *supra* note 131.

142. *See id.*; *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

143. *See Pedagogical Considerations for Teaching with Zoom*, *supra* note 9; *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

144. *See* LEVY, *supra* note 10, at 73–78 (discussing several great ideas for creating in-class quizzes using Zoom's polling feature); *Pedagogical Considerations for Teaching with Zoom*, *supra* note 9; *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

145. *See In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

146. *See Pedagogical Considerations for Teaching with Zoom*, *supra* note 9; *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

147. *See* LEVY, *supra* note 10, at 205–206; *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

Zoom’s “breakout room” is a great tool to facilitate in-class student collaboration, perhaps better than we could do before the pandemic.¹⁴⁸ Though LRW professors have long used the technique of putting students into small working groups during class and then assigning them a task to complete, like a peer edit or solving a legal research problem, Zoom’s version streamlines the logistics, which leaves more time for students to actually work on the assignment.¹⁴⁹ For one thing, it saves time creating collaborative groups and then finding the physical space in the building so they can all work without stepping on each other’s toes.¹⁵⁰ Once in their Zoom breakout rooms, it is easier for the professor to check their progress, pose and answer questions, and make sure each group stays on task compared to literally having to run between groups in the building.¹⁵¹

Because of the importance some experts place on incorporating collaborative group work during the pandemic, here are some additional tips, courtesy of the internet, for making more effective use of Zoom’s breakout rooms:¹⁵²

- ∞ Use the chat box to give students written instructions for the task you want them to complete before sending them to the breakout rooms.¹⁵³
- ∞ Incorporate several, short breakout sessions per class where students confer, return to the class to report, and then go back to their breakout room for further discussion.¹⁵⁴
- ∞ Use Google Documents to give each group a list of questions to answer or tasks to complete.¹⁵⁵

148. See *Facilitate Group Work*, UNIV. OF COLO. BOULDER, <http://www.colorado.edu/center/teaching-learning/teaching-resources/teaching-well-technology/zoom/facilitate-group-work> (last visited May 12, 2021); *Pedagogical Considerations for Teaching with Zoom*, *supra* note 9.

149. See *Facilitate Group Work: Zoom Breakout Rooms*, *supra* note 148; *Pedagogical Considerations for Teaching with Zoom*, *supra* note 9; *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

150. Duhart et al., *supra* note 23.

151. See *id.*; *Facilitate Group Work: Zoom Breakout Rooms*, *supra* note 148; *Pedagogical Considerations for Teaching with Zoom*, *supra* note 9.

152. See *Facilitate Group Work: Zoom Breakout Rooms*, *supra* note 148; *Pedagogical Considerations for Teaching with Zoom*, *supra* note 9.

153. *Facilitate Group Work: Zoom Breakout Rooms*, *supra* note 148.

154. See *id.*; *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

155. *Facilitate Group Work: Zoom Breakout Rooms*, *supra* note 148; *Pedagogical Considerations for Teaching with Zoom*, *supra* note 9.

- ∞ Assign each breakout group a role or task to complete so they have a clear understanding of how to use their time in the breakout room.¹⁵⁶ Consider assigning a member of each breakout group the role of reporting to the class the task the group accomplished during the breakout session.¹⁵⁷
- ∞ Designate a student to use the screen-share function to have the group collaborate on the drafting of a legal writing document during the breakout session and then report on the group's work to the class.¹⁵⁸

Zoom has several features designed to help teachers actively engage students in multiple ways during class, including facilitating important collaborative group work.¹⁵⁹ Whether used alone or in combination, it means Zoom gives us several options to assess student understanding, provide feedback, and answer questions at multiple intervals during each class session in ways that were not always possible before the pandemic in a traditional classroom.¹⁶⁰

B. *The Importance of Employing Multimodal Teaching Methods While Avoiding the Fallacies of Learning Style Theory*

Another key principle of good pedagogy derived from cognitive science is the importance of employing multimodal teaching methods.¹⁶¹ This refers to the desirability of using instructional methods that engage multiple sensory systems associated with learning like auditory, verbal, visual, spatial, and kinesthetic.¹⁶² One reason for the belief that a multimodal

156. *Facilitate Group Work: Zoom Breakout Rooms*, *supra* note 148.

157. *Id.*

158. *Id.*

159. *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56; *see also Engaging Students Through Zoom*, *supra* note 125.

160. *See In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

161. *See* Kathy Kuhl, *The Myth of Learning Styles*, LEARN DIFFERENTLY, <http://www.learndifferently.com/2013/01/09/the-big-what-now-book-of-learning-styles-by-carol-barnier/> (last visited May 12, 2021) (noting learning styles don't exist, but multimodal teaching strategies are effective at reaching the most students); Harold Pashler et al., *Learning Styles: Concepts and Evidence*, 9 PSYCH. SCI. PUB. INT. 105, 117 (2008) (noting evidence does not support learning style theory, but multimodal teaching methods are effective); Megan Sumeracki, *Dual Coding and Learning Styles*, THE LEARNING SCIENTISTS (June 6, 2019), <http://www.learningscientists.org/blog/2019/6/6-1> (noting the difference between "learning style" theory, which lacks empirical support and multimodal instruction, and "dual coding," which is a better evidence-based approach to teaching).

162. Kuhl, *supra* note 161.

teaching style is effective is because it “lights up” more areas of the brain associated with that experience, which may encode it in ways that enhance learning.¹⁶³ In more practical terms, multimodal teaching is an effective classroom strategy because it often takes a variety of teaching methods, techniques, and styles for the professor to reach every student in the classroom.¹⁶⁴ Some students may understand the material better in response to a verbal explanation while others may understand it better if the professor uses a visual or kinesthetic teaching method.¹⁶⁵ Thus, a multimodal teaching style is believed to improve learning outcomes because the professor is leveraging a diversity of styles and methods to connect with every student in the class.¹⁶⁶

The effectiveness of a multimodal teaching strategy should not be confused with so-called “learning style” theory which posits that every student has a unique learning preference based on the major senses associated with learning like visual, auditory, verbal, or kinesthetic.¹⁶⁷ This popular theory says that, for example, students who are visual learners will learn best when the professor employs visual teaching methods.¹⁶⁸ Related to this is the common assumption that students raised on digital technologies, like smartphones, are primarily visual learners who learn best in response to visual teaching methods.¹⁶⁹ While cognitive science supports the validity of multimodal teaching theory, studies have shown there is no evidence to support learning style theory, nor is there support for the claim that today’s students are primarily visual learners who always learn best when professors employ a visual teaching style.¹⁷⁰

163. *Id.* By using teaching techniques that “light up” areas of the brain associated with different senses, it may encode those experiences in ways that enhance both memory and the ability to recall it. See MEDINA, *supra* note 112, at 208–10; SHELL ET AL., *supra* note 114, at 26, 77, 183–84.

164. See Kuhl, *supra* note 161; Pashler et al., *supra* note 161, at 117; Sumeracki, *supra* note 161.

165. See Kuhl, *supra* note 161; Pashler et al., *supra* note 161, at 106; Sumeracki, *supra* note 161.

166. See Pashler et al., *supra* note 161, at 108, 117; Kuhl, *supra* note 161; Sumeracki, *supra* note 161.

167. Pashler et al., *supra* note 161, at 106, 108; Kuhl, *supra* note 161.

168. Pashler et al., *supra* note 161, at 106.

169. Levy, *supra* note 27, at 252, 274–76, 285. Little to no evidence exists supporting the common assumption that so-called digital natives are tech savvy or more “visual” than anyone else. *Id.* at 252; see also Henry H. Wilmer et al., *Smartphones and Cognition: A Review of Research Exploring the Links between Mobile Technology Habits and Cognitive Functioning*, FRONTIERS PSYCH., Apr. 2017, at 1, 1.

170. Pashler et al., *supra* note 161, at 112, 117 (showing meta-analysis of numerous learning style studies has found no evidence to support learning style theory);

To illustrate the fallacy of learning style theory, consider the following: Even if a student identifies as an auditory learner, for example, she will not learn geography very well by listening to her professor describe the shapes of the countries.¹⁷¹ Instead, she will learn it best when the professor uses a visual teaching method like showing her a map of the relevant countries.¹⁷² Similarly, a student who identifies as a visual learner will not learn a foreign language best by memorizing the spelling of those words.¹⁷³ Instead, he will learn it best when the professor demonstrates how to pronounce the words and then gives the student a chance to practice.¹⁷⁴ Thus, cognitive science tells us that teachers are most effective when they use methods or techniques that are most compatible with the learning objective at issue.¹⁷⁵ That may not always involve a visual teaching technique or style, even if that is the student's preferred way to consume information.¹⁷⁶ Cognitive science warns that the risk of relying on learning style theory, or the assumption that today's students are primarily visual learners, is that professors will overlook other techniques or methods that are more compatible with the learning objectives at issue which can actually undermine learning.¹⁷⁷

Daniel Willingham, *Classroom Practice — Listen Closely, Learning Styles Are a Lost Cause*, TES (Nov. 21, 2014, 12:00 AM), <http://www.tes.com/news/classroom-practice-listen-closely-learning-styles-are-lost-cause> [hereinafter Willingham, *Classroom Practice*] (stating science has proven that learning styles do not exist); see also DANIEL T. WILLINGHAM, *WHY DON'T STUDENTS LIKE SCHOOL? A COGNITIVE SCIENTIST ANSWERS QUESTIONS ABOUT HOW THE MIND WORKS AND WHAT IT MEANS FOR THE CLASSROOM* 113, 119–20 (1st ed. 2009); Daniel T. Willingham, *Are You a Visual or Auditory Learner? It Doesn't Matter*, N.Y. TIMES (Oct. 4, 2018), <http://www.nytimes.com/2018/10/04/opinion/sunday/visual-learner-auditory-school-education.html> [hereinafter Willingham, *Are You a Visual or Auditory Learner?*] (“[T]here is no good scientific evidence that learning styles . . . exist.”); Levy, *supra* note 27, at 274–76, 285.

171. WILLINGHAM, *supra* note 170, at 119–20

172. *Id.*; Levy, *supra* note 27, at 274.

173. Levy, *supra* note 27, at 274.

174. *Id.* at 258, 274.

175. *Id.* at 274; Willingham, *Are You a Visual or Auditory Learner?*, *supra* note 170 (stating that adhering to learning style theory can actually hurt learning outcomes when educators overlook methods or techniques that are better suited to the particular objective at hand).

176. Levy, *supra* note 27, at 274; Willingham, *Are You a Visual or Auditory Learner?*, *supra* note 170.

177. See Levy, *supra* note 27, at 274; Willingham, *Are You a Visual or Auditory Learner?*, *supra* note 170.

To be sure, this presents a challenge for LRW professors using Zoom because it is such a heavily visual platform.¹⁷⁸ The solution, however, is that we need to be more deliberate about incorporating a range of methods and styles into our online teaching repertoire rather than over-rely on slides and screen-sharing.¹⁷⁹ By comparison, this is second nature to us in a physical classroom where we often toggle between teaching styles and methods without giving it a thought.¹⁸⁰ For example, if we show a PowerPoint in class that is met with blank stares, we intuitively switch to another way to make the point, like a verbal explanation or perhaps diagramming it on the board.¹⁸¹ Interestingly, research suggests that even when we are lecturing at the front of the classroom, students may in fact experience that as multimodal teaching because it lights up the parts of their brain associated with physical movement as well as auditory and visual circuits.¹⁸² It is interesting to consider whether any of the physical aspects of teaching and learning present in a brick and mortar classroom that are helpful to students are missing from the online experience such that we should try to address that.¹⁸³

Though it is admittedly more difficult to implement a multimodal teaching strategy with Zoom, cognitive science says it is important that we try.¹⁸⁴ For that reason, cognitive science suggests we should resist the temptation to rely too heavily on visual tools like slides, PowerPoints, and screen-shares to the exclusion of other techniques.¹⁸⁵ A challenge to be sure with Zoom, but we can address it by making a more deliberate effort to switch-up our teaching methods to include lectures, putting ourselves on camera, using Zoom's many interactive features, and anything else we can do to inject some pedagogical variety and diversity into each class session.¹⁸⁶

178. See Willingham, *Are You a Visual or Auditory Learner?*, *supra* note 170; Levy, *supra* note 24.

179. Levy, *supra* note 27, at 305.

180. See *id.* at 290–91.

181. See *id.* at 290.

182. See *How To Make Teaching More Engaging*, *supra* note 63 (discussing the importance of movement and physicality in teaching to helping students learn); Levy, *supra* note 24; Trond E. Toft, *Better Learning Through Handwriting*, SCIEDAILY (Jan. 24, 2011), <http://www.sciencedaily.com/releases/2011/01/110119095458.htm> (stating that merely watching physical activity lights up areas of the brain associated with physical movement which means the experience is processed by the brain both visually and physically).

183. See MEDINA, *supra* note 112, at 208–10; SHELL ET AL., *supra* note 114, at 26, 77, 183–84.

184. See WILLINGHAM, *supra* note 170, at 116.

185. See Levy, *supra* note 16; Levy, *supra* note 27, at 290–91.

186. See *Teaching with Zoom*, *supra* note 131; *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56; James B. Levy, *How I Learned to Stop Worrying and Love*

I do this myself by often switching between lectures, putting myself on camera, using screen-sharing, making use of the physical whiteboards mentioned earlier, incorporating other physical props, and encouraging students to use the chat and nonverbal feedback functions during class.* In particular, I make extensive use of the whiteboards I keep next to my desk by writing and diagramming on them frequently as I would in a traditional classroom.* The students tell me that they find this effective in part because it gives them a respite from watching so many visuals in their other classes.*

It is also worth noting that my students and I both agree we prefer the physical whiteboards to Zoom's digital version.* Students seem to be better engaged watching a professor write on a real whiteboard than seeing typed characters appear on their screens with Zoom's digital whiteboard.* They also seem to appreciate that I'm making an effort to switch things up which makes the class more visually dynamic and therefore more interesting to watch.* The response I have gotten from students is consistent with multimodal teaching theory as well as published reports from a variety of students who have rated their Zoom sessions more effective when the professor tries to engage them in a variety of ways.¹⁸⁷

C. *Making Our Zoom Classes More Social During a Time of Social Distancing*

Another key principle of good pedagogy based in cognitive science is the vital importance of the classroom social atmosphere and rapport between professor and students.¹⁸⁸ Cognitive science tells us that the brain is

Zoom — My Embrace of Online Teaching (with pics!) — Part 1, LEGAL SKILLS PROF BLOG (Nov. 18, 2020), http://lawprofessors.typepad.com/legal_skills/2020/11/how-i-learned-to-stop-worrying-and-love-zoom-my-sort-of-embrace-of-online-teaching-with-pics.html.

187. See Tae Eun Shim & Song Yi Lee, *College Students' Experience of Emergency Remote Teaching Due to Covid-19*, CHILD. & YOUTH SERVS. REV., Oct. 2020, at 1, 5; Cindy Chen et al., *Learners' Experience and Needs in Online Environments: Adopting Agility in Teaching*, 14 J. RSCH. INNOVATIVE TEACHING & LEARNING 18, 21–22, 28 (2021) (detailing survey of undergraduate students who felt they learned best during emergency remote teaching in Spring 2020 when instructors employed a variety of methods and techniques); Doug Lederman, *What Worked This Spring? Well-Designed and Well-Delivered Courses*, INSIDE HIGHER ED (July 8, 2020) <http://www.insidehighered.com/digital-learning/article/2020/07/08/what-kept-students-studying-remotely-satisfied-spring-well> (noting a survey of more than 1,000 college students found they were most satisfied with emergency remote teaching during Spring 2020 when instructors employed a variety of techniques and methods).

188. KEN BAIN, *WHAT THE BEST COLLEGE TEACHERS DO* 78, 189 (2004) (reporting study of sixty-three outstanding teachers over fifteen years concluded that the secret of excellent teaching is not particular practices but the *attitude* those teachers had toward their

designed to serve the deeply social needs of the creatures we evolved to be.¹⁸⁹ Indeed, the survival of our ancestors depended upon the emotional intelligence necessary to read the feelings, intentions, and state of mind of others.¹⁹⁰ As a result, we are designed to communicate and understand a tremendous amount of information by way of nonverbal cues like body language and subtle facial expressions.¹⁹¹ It means our brain is acutely attuned to the thoughts, moods, and emotions of others, which has always had very important implications for the classroom.¹⁹²

For instance, the “Pygmalion Effect” refers to the phenomenon that we tend to succeed or fail based on the expectations placed on us by others.¹⁹³ The theory of emotional contagion recognizes that people tend to coordinate and synchronize their emotions with others, which means that laughter really is contagious, and if you want your students to be interested in what you are teaching, you need to be interested in it yourself.¹⁹⁴ The theory of embodied cognition recognizes there is a profound mind-body connection involved in all cognition and thus classroom learning is both a social and physical activity.¹⁹⁵ All of these phenomena are the reason many

students); David J. Walsh & Mary Jo Maffei, *Never in a Class By Themselves: An Examination of Behaviors Affecting the Student-Professor Relationship*, ESSAYS ON TEACHING EXCELLENCE, <http://podnetwork.org/content/uploads/V7-N2-Walsh-Maffei.pdf> (last visited May 12, 2021) (stating there is a substantial link between the professor-student relationship and educational outcomes); Levy, *supra* note 63, at 56, 59 (“[T]eacher characteristics like warmth, support, and expectations can play a larger role in student achievement than almost any other consideration, including I.Q.”); *How to Play in the College Classroom in a Pandemic, and Why You Should* *supra* note 63 (discussing vital importance of emotionally engaging students during class); see also DANIEL GOLEMAN, EMOTIONAL INTELLIGENCE 34–36 (10th Anniversary ed. 2006).

189. See *How to Make Your Teaching More Engaging*, *supra* note 63; Levy, *supra* note 27, at 268–69 n.168–69, 171.

190. See Levy, *supra* note 27, at 269.

191. See *id.*

192. See *id.*; *How to Make Your Teaching More Engaging*, *supra* note 63.

193. BAIN, *supra* note 188, at 72 (noting research shows that the best teachers have faith in their students’ ability to achieve and students, in turn, are buoyed by those positive expectations); ROBERT ROSENTHAL & LENORE JACOBSON, PYGMALION IN THE CLASSROOM: TEACHER EXPECTATION AND PUPILS’ INTELLECTUAL DEVELOPMENT vii (1968); see also Levy, *supra* note 63, at 59.

194. See ELAINE HATFIELD ET AL., EMOTIONAL CONTAGION 16–18, 79 (1994) (stating that humans synchronize their emotions with those around them such that panic literally does sweep through a crowd and laughter is indeed contagious); Levy, *supra* note 63, at 51, 59, 83–84.

195. See HATFIELD ET AL., *supra* note 194, at 79; Levy, *supra* note 63, at 51–52. The theory of embodied cognition states that because the brain and body evolved together, with each informing the design of the other, a profound connection still exists between the two, meaning that we think and learn with both our mind *and* our body. See

experts argue that the social aspects of being in an actual classroom with others are a tremendously important part of teaching and learning.¹⁹⁶

In a Zoom class, however, the teacher and students are all physically isolated from each other, with everyone sitting alone behind their computer screens.¹⁹⁷ Zoom uncouples the purely instructional component of class from the social and physical aspects of attending a class with others.¹⁹⁸ In a brick and mortar classroom, students feel the professor's warmth, enthusiasm, and encouragement which directly impacts their interest, motivation, and engagement, among other positive effects.¹⁹⁹ Student learning is also impacted by their classroom relationships with peers, as well as interactions outside the classroom in study groups, and as a result of the friendships that naturally arise just from being in the building.²⁰⁰ These relationships can help reduce the stress of law school and provide important emotional support to handle its challenges.²⁰¹

ROBERT SYLWESTER, *A CELEBRATION OF NEURONS: AN EDUCATOR'S GUIDE TO THE HUMAN BRAIN* 57 (1995) (recognizing our skin is where the brain meets the outside world); FRANK R. WILSON, *THE HAND: HOW ITS USE SHAPES THE BRAIN, LANGUAGE, AND HUMAN CULTURE* 286, 289 (1998) (noting the clear message from biology to educators is that the most effective teaching techniques aim at uniting, not divorcing, the mind and body); *How to Make Your Teaching More Engaging*, *supra* note 63; Brandon Keim, *The Science of Handwriting*, *SCI. AM.*, Sept.–Oct. 2013 at 54, 56 (acknowledging that the mind-body connection is paramount; “[w]e use our hands to access our thoughts”); Levy, *supra* note 27, at 276.

196. See Levy, *supra* note 63, at 51–52, 59.

197. See Tim Walker, *Social-Emotional Learning Should be Priority During COVID-19 Crisis*, *NAT'L EDUC. ASS'N* (April 15, 2020), <http://www.nea.org/advocating-for-change/new-from-nea/social-emotional-learning-should-be-priority-during-covid-19>; Levy, *supra* note 27, at 273; Levy, *supra* note 24.

198. See Walker, *supra* note 197.

199. See *How To Make Your Teaching More Engaging*, *supra* note 63; Blum, *supra* note 37; June, *supra* note 123 (noting student motivation to learn fell during pandemic related remote learning in Fall 2020); Eun Shim & Yi Lee, *supra* note 187, at 1–2 (college students say having personal interaction with professors in online classes is key to their motivation to learn); *Part I: What Do You Think of Zoom University*, *supra* note 123 (students say that watching teachers' talking heads does not motivate them to learn); Rimer, *supra* note 17 (students say they miss being in the classroom because the personal interaction motivates them to learn).

200. See Gary Polakovic, *To Manage COVID-19 Stress, Develop Healthy New Habits and Consume News in Moderation*, *USC NEWS* (March 31, 2020), <http://news.usc.edu/167512/covid-19-stress-coping-healthy-habits-usc-social-science-experts/#>; James B. Levy, *Helping 1L Law Students Find Study Groups During a Time of Online Teaching*, *LEGAL SKILLS PROF BLOG* (Sept. 11, 2020), http://lawprofessors.typepad.com/legal_skills/2020/09/helping-1l-law-students-find-study-groups-during-a-time-of-online-teaching.html.

201. Levy, *supra* note 200.

Due to the pandemic's requirement that we socially distance, students have been deprived almost entirely of this critical part of the law school experience.²⁰² For that reason, many feel that attending classes by Zoom is not a good substitute for being in a live classroom with others.²⁰³ On the other hand, Zoom creates new opportunities for students to interact with the professor and each other in ways that can be intimate, direct, and less hierarchical than what occurs in a traditional classroom.²⁰⁴

As a starting point, professors should try to compensate for the shortcomings of Zoom by being more intentional in showing students compassion and empathy during these stressful circumstances.²⁰⁵ The first year of law school is already difficult enough even under the best circumstances, but the pandemic has obviously made things worse.²⁰⁶ Not surprisingly, students are reporting elevated levels of stress due to not just their studies but also worries about the health of family members, finances, and other pandemic-related concerns.²⁰⁷ Because nonverbal communication is more difficult via Zoom, professors should be more explicit in showing students that we care and support them during these extraordinary times.²⁰⁸ One way to do that is to spend a few moments at the start of each class to check-in with students and ask how they are doing.²⁰⁹ Acknowledge the stress of the pandemic and that law school is especially difficult under these circumstances.²¹⁰ While it is prudent to not overshare personal

202. Dutton & Ryznar, *supra* note 4 (manuscript at 19).

203. *See id.* (manuscript at 4); June, *supra* note 123; Rimer, *supra* note 17; *Part I: What Do You Think of Zoom University?*, *supra* note 123.

204. Peter Paccone, *Building Rapport In the Online Environment*, MEDIUM: PETER PACCONE (Nov. 5, 2020), <http://ppaccone.medium.com/building-rapport-in-the-era-of-online-teaching-f3d480f87905>.

205. *See* Levy, *supra* note 63, at 71; Colleen Flaherty, *Grading for a Pandemic: How Lenient, or Not, Should Professors be With Students Right Now?*, INSIDE HIGHER ED (Apr. 23, 2020), <http://www.insidehighered.com/news/2020/04/23/how-lenient-or-not-should-professors-be-students-right-now>; Peter H. Huang & Debra S. Austin, *Unsafe at Any Campus: Don't Let Colleges Become the Next Cruise Ships, Nursing Homes, and Food Processing Plants*, 96 IND. L.J. SUPP. 25, 61 (2020); Julia Schmalz, 'Do No Harm': The Coronavirus Calls for Compassion, Say Faculty Members Sharing Advice, THE CHRON. OF HIGHER EDUC. (Mar. 27, 2020), <http://www.chronicle.com/article/do-no-harm-the-coronavirus-crisis-calls-for-compassion-say-faculty-members-sharing-advice/>.

206. Levy, *supra* note 63, at 54, 61; *see also* García & Weiss, *supra* note 104.

207. *See* Betsy Barre, *The Workload Dilemma*, WAKE FOREST UNIV.: CTR. FOR THE ADVANCEMENT OF TEACHING (Jan. 22, 2021), <http://cat.wfu.edu/2021/01/the-workload-dilemma/#> (reporting elevated levels of stress by college students because of the extra workload associated with taking classes online during the pandemic).

208. *Id.*

209. *See id.*; Paccone, *supra* note 204.

210. *See* Barre, *supra* note 207.

information—students are in school to learn not to be a sounding board for their teachers’ problems—letting students know that the pandemic has been difficult for you too helps to humanize the teacher and shows empathy.²¹¹

Another way I have tried to show support for my students during the pandemic is to relax the collaboration rules on some assignments by encouraging more group work and the social support that it provides.* I have also offered to help students form study groups if they are interested in working with others but have found it difficult to connect with others since nearly everyone is staying away from the building.²¹² Another way to facilitate more group work and collaborative opportunities that provide important social support is to make more frequent use of Zoom’s breakout rooms in class than you might otherwise do.²¹³ Also, consider holding group virtual office hours to compensate for the lack of normal social interaction in class because of the pandemic.²¹⁴

During class, Zoom’s “gallery view” creates a great opportunity to build a supportive and collaborative classroom culture.²¹⁵ In a physical classroom, everyone is facing the professor.²¹⁶ But on Zoom, everyone faces each other, which can mitigate the normal hierarchy of the classroom that exists in face-to-face teaching and make students feel more like equal participants in class.²¹⁷ Rather than the “sage on the stage,” Zoom’s gallery view arguably puts the professor on equal footing with everyone else in class.²¹⁸ It is a definite advantage of Zoom in terms of creating a more egalitarian classroom culture, but on the other hand, it may also necessitate the adoption of ground rules for class discussion and other netiquette

211. See Paccone, *supra* note 204. Empathy is one of the most important characteristics of leadership in all contexts as it provides emotional support and increases resiliency among other psychological benefits.

212. See Levy, *supra* note 200; Orlov et al., *supra* note 3. Students have told me they “socialize” at a time of social distancing by forming online study groups using the text messaging platform WhatsApp.

213. See *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56; *Facilitate Group Work: Zoom Breakout Rooms*, *supra* note 148.

214. *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56; Levy, *supra* note 16.

215. *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56; *Socratic Zooming: Faculty Weigh in on Teaching Remotely*, *supra* note 9.

216. See *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56; Blum, *supra* note 37.

217. See Nathenson, *supra* note 1 (manuscript at 19, 34); Zac Wolfitt, *A Year in the Life of Video Teaching: 2020, a Year to Remember*, BLOGSPOT (Dec. 17, 2020), <http://zacwoolfitt.blogspot.com/>; Blum, *supra* note 37.

218. See Nathenson, *supra* note 1 (manuscript at 19, 34); Wolfitt, *supra* note 217.

protocols to address the tendency of Zoom participants to talk over each other.²¹⁹ Such a classroom policy might also address rules about whether webcams should remain on, when to turn them off, muting microphones, handling bathroom breaks, and similar issues we are all trying to figure out as we go.²²⁰

With respect to individual student writing conferences, I have found Zoom to be an especially effective way to interact with students for the reasons noted above.²²¹ In comparison to in-person writing conferences held in my office where the student and I sit side-by-side, on Zoom we face each other while reviewing drafts.* That seems to add a directness and intimacy that makes the conferences more effective.* And because students can participate from the comfort of their homes, they seemed more relaxed than coming to the professor's office which may intimidate some.* I also like the ability to put student drafts up on one monitor that we can view together via the screen-sharing function while also being able to speak face-to-face using the second monitor.* It means I can read the student's nonverbal cues more easily than sitting side-by-side in my office which helps me discern if they're confused.* Overall, I have had a very favorable experience holding one-on-one student writing conferences via Zoom and as a result plan to continue to offer that as an option even after the pandemic ends.*

Obviously, social distancing requirements make it challenging to address the important social and physical aspects of being in a classroom with others.²²² Yet, Zoom also creates new and unique opportunities to interact with students in a more personal and direct way than is sometimes possible in a brick and mortar classroom.²²³ Like most aspects of teaching with Zoom that we have discovered over the past year, for every obstacle it creates, it also reveals a new opportunity to help our students learn.²²⁴

IV. CONCLUSION

Making the sudden shift to remote online teaching in the Spring of 2020 as the result of the Covid crisis was a tremendous challenge for all

219. See *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56; Paccone, *supra* note 204.

220. See *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56.

221. *Id.*; see also Levy, *supra* note 16.

222. See *Socratic Zooming: Faculty Weigh in on Teaching Remotely*, *supra* note 9; Levy, *supra* note 16.

223. See *In-Depth Guide: Use Zoom to Teach Online*, *supra* note 56; *Facilitate Group Work: Zoom Breakout Rooms*, *supra* note 148.

224. See Levy, *supra* note 16.

educators.²²⁵ But it may have presented particularly difficult challenges for Legal Research and Writing professors who had to quickly figure out how to teach a range of hands-on legal practice skills while sitting behind a desk using a videoconferencing platform.²²⁶ It meant spending the spring and summer learning about new technology platforms like Zoom, while also trying to figure out how to best adapt the lessons we had created for the classroom to an online environment.²²⁷ Adding to the uncertainty about how best to proceed was conflicting advice many of us read about whether remote online teaching demanded an entirely new type of pedagogy that fit the contours of technologies like Zoom, or instead, whether it would be teaching as usual except this time we would be doing it in front of a webcam rather than a classroom filled with students.²²⁸

Whenever I have struggled with teaching issues in the past, either because a class did not go as expected or I momentarily lost confidence in my own effectiveness as a teacher, I would always remind myself to return to the basics.* For me, that has meant looking to cognitive science for guidance that consists of objective, research-based strategies reflecting how students actually learn.* During the pandemic, it suggested an approach that combined the unique features of videoconferencing platforms like Zoom to actively engage students together with traditional classroom strategies that have always worked well for us in the past.* As with every challenge we face in life, the pandemic has taught us that whatever obstacles may be placed in front of us, they can also lead to new opportunities to grow and develop.* At the same time, the pandemic reminded us that teaching is a deeply social endeavor which technology can never fully supplant.* Accordingly, as we emerge from this crisis over the coming months, we look forward to returning to the classroom informed by the lessons learned while teaching during a pandemic and equipped with new tools that can help make us better, more versatile teachers moving forward.* Until then, stay safe and Godspeed.*

225. *See id.*; *Socratic Zooming: Faculty Weigh in on Teaching Remotely*, *supra* note 9.

226. *Socratic Zooming: Faculty Weigh in on Teaching Remotely*, *supra* note 9; Duhart et al., *supra* note 23.

227. Levy, *supra* note 16.

228. *See id.*; Levy, *supra* note 24.