Learning Outcomes in a Flipped Classroom: A Comparison of Civil Procedure II Test Scores Between Students in a Traditional Class and a Flipped Class

KATHARINE T. SCHAFFZIN*

* Katharine T. Schaffzin is Associate Professor and Director of Faculty Development at the University of Memphis Cecil C. Humphreys School of Law. This Article was made possible thanks to the support of the Law School, as well as the research assistance of Rachel N. Cade. The library and administrative assistance of Howard Bailey, Lucinda Valero, and Cheryl Edwards was invaluable to this project. The author thanks the faculty of the Law School for their helpful suggestions in shaping the direction of this article, as well as Daniel M. Schaffzin for his generous support. The input of Jeremy Bock, Michele Pistone, and Andrea Curcio was essential to this article.

I. INTRODUCTION

By now, many legal educators have heard of a "flipped classroom," even if they may not be familiar with its meaning. The odds are great that more and more law students have experienced a flipped classroom in high school, college, or even in law school,[1] although they may be unfamiliar with the pedagogical term. After learning about how the flipped classroom is being adapted for the law school course,[2] I became convinced that such an approach to teaching could benefit my students' learning outcomes.

In January 2014, I decided to adapt my own Civil Procedure II materials to this new format. Unbeknownst to my students, I tracked the performance of this class to compare it to that of my Civil Procedure II class from the preceding year.[3] Assigning the same readings from the same texts in both 2013 and 2014,[4] I changed only the mode in which I delivered the material to my students. Information I had previously presented to my class in 2013 in the form of a lecture interspersed with Socratic dialogue I now provided to the 2014 class online in advance of class and indefinitely thereafter in the form of PowerPoint slides with my lec-

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1. *See generally infra* Part II.

2. I heard about flipped learning as early as 2013, but I was not inspired to make a change until I heard Michele Pistone of Villanova Law School speak about the practice and her LegalED website at the 2014 Annual Meeting of the Association of American Law Schools in January 2014 in New York, New York.

3. The idea of comparing the performance of the 2013 and 2014 classes belongs to Andrea Curcio of Georgia State University Law School. Professor Curcio urged me to empirically study the results of my experiment in teaching methods in response to my guest blog post on LegalED.

4. Both classes read assignments from JACK H. FRIEDENTHAL, ARTHUR R. MILLER, JOHN E. SEXTON, & HELEN HERSHKOFF, CIVIL PROCEDURE: CASES & MATERIALS (West, 10th ed. 2009), LEWIS A. GROSSMAN & ROBERT G. VAUGHN, A DOCUMENTARY COMPANION TO *A CIVIL ACTION* (Foundation Press, 4th ed. 2008), and JONATHAN HARR, A CIVIL ACTION (no specific edition was assigned). Admittedly, each class was assigned the most current rules supplement which differed slightly, as one might expect. *Compare* JACK H. FRIEDENTHAL, ARTHUR R. MILLER, JOHN E. SEXTON, & HELEN HERSHKOFF, 2012–2013 CIVIL PROCEDURE: SUPPLEMENT (West 2012), *with* JACK H. FRIEDENTHAL, ARTHUR R. MILLER, JOHN E. SEXTON, & HELEN HERSHKOFF, 2013–2014 CIVIL PROCEDURE: SUPPLEMENT (West 2013).

ture interposed as voiceover. Although I had also assigned hypothetical problems to the class in 2013, it was not uncommon that we would not have time to discuss all of those assigned problems in class. Inside the classroom in 2014, however, the class worked through assigned problems and many more requiring students to apply the content read and viewed in advance of class to hypothetical situations. I administered final examinations in both April 2013 and 2014 that were fifty percent identical. The content of the course and half the examination were the same in 2013 and 2014. The only thing that had changed was how I delivered that content to students.

This article documents my experience flipping a law school course in Civil Procedure. In Part II, I introduce the reader to the concept of flipped learning, as well as its development.[5] In Part III, I describe the evolution of the traditional law school learning environment and discuss new trends in legal pedagogy.[6] In Part IV, I explain the similarities and differences between my traditional course in Spring 2013 and my flipped course in 2014.[7] In Part V, I compare the performances of my 2013 and 2014 classes on the same exam and draw conclusions therefrom.[8] In Part VI, I conclude that the flipped learning experience was, overall, a success, although the objective performance of students on my exam was statistically insignificant.[9]

II. WHAT IS FLIPPING AND WHY IS IT POPULAR?

The concept of a flipped classroom is relatively new; in 2007, two chemistry teachers first developed it in a high school classroom in Colorado.[10] The idea took hold quickly and educa-

5. *See infra* Part II.
6. *See infra* Part III.
7. *See infra* Part IV.
8. *See infra* Part V.
9. *See infra* Part VI.
10. NOORA HAMDAN ET AL., THE FLIPPED LEARNING MODEL: A WHITE PAPER BASED ON THE LITERATURE REVIEW TITLED *A REVIEW OF FLIPPED LEARNING* 3 (2013) ("Two rural Colorado chemistry teachers, Jonathan Bergmann and Aaron Sams, are often referred to as the pioneers of Flipped Learning. Concerned that students frequently missed end-of-day classes to travel to other schools for competitions, games or other events, they began to use live video recordings and screencasting software in 2007 to record lectures, demonstra-

tors from high schools, then colleges, and in recent years, even a few law schools quickly began adopting this teaching method.[11] What is involved? "As its name suggests, flipping describes the inversion of expectations in the traditional college lecture."[12] Essentially, educators reverse what typically happens in a classroom with what usually happens at home.

> A flipped classroom inverts the traditional education model so that the content is delivered outside of class, while class time is spent on activities normally considered "homework." For example, students may access instructional material through videos, podcasts or online tutorials before the class meeting. Then during class time, students work on activities which force them to apply what they have learned.[13]

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tions, and slide presentations with annotations."); Catherine A. Lemmer, *A View from the Flip Side: Using the "Inverted Classroom" to Enhance the Legal Information Literacy of the International LL.M. Student*, 105 LAW LIBR. J. 461, 464–65 (2013); *Seven Things You Should Know About . . . Flipped Classrooms*, EDUCAUSE (Feb. 2012), http://net.educause.edu/ir/library/pdf/ELI7081.pdf; *The Teacher's Guide to Flipped Classrooms*, EDUDEMIC, http://www.edudemic.com/guides/flipped-classrooms-guide/ (last visited Mar. 14, 2016); Antonio Membrillo, *The Flipped Classroom*, PREZI (Jan. 16, 2014), https://prezi.com/dynqyw5ubkio/the-flipped-classroom/ ("Many factors influenced the creation and adoption of the flipped classroom model. However, two specific innovators played a key role. Teachers Jonathan Bergman and Aaron Sams at Woodland Park High School in Woodland Park, CO, discovered software to record PowerPoint presentations. They recorded and posted their live lectures online for students who missed class.").

11. *See infra* Section II.A.

12. Dan Berrett, *How 'Flipping' the Classroom Can Improve the Traditional Lecture*, CHRON. HIGHER ED. (Feb. 19, 2012), http://chronicle.com/article/How-Flipping-the-Classroom/130857 ("It takes many forms, including interactive engagement, just-in-time teaching (in which students respond to Web-based questions before class, and the professor uses this feedback to inform his or her teaching), and peer instruction."); *see* K.K. DuVivier, *Goodbye Christopher Columbus Langdell?*, 43 ENVTL. L. REP. NEWS & ANALYSIS 10475, 10476 (2013).

13. Candice Benjes-Small & Katelyn Tucker, *Keeping up with . . . Flipped Classrooms*, ASS'N C. & RES. LIBR, http://www.ala.org/acrl/publications/keeping_up_with/flipped_classrooms; Nicole Larson, *The Flipped*

In theory, students walk into the classroom with a greater understanding of the material than they would otherwise have walking into a traditional classroom. "But the techniques all share the same underlying imperative: Students cannot passively receive material in class . . . . Instead they gather the information largely outside of class, by reading, watching recorded lectures, or listening to podcasts."[14]

The process of flipped learning, also called an inverted classroom or reverse instruction,[15] seems simple: present information before class and do homework together in class.[16] However, this explanation "does not adequately represent the practice of what researchers are calling the flipped classroom. This definition would imply that the flipped classroom merely represents a reordering of classroom and at-home activities. In practice, however, this is not the case."[17] There is much more to flipping a class than putting a lecture online and doing homework in class. The process involves "a 'pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject

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Classroom Inverts Traditional Teaching Methods, PREZI (Feb. 13, 2014) ("The flipped classroom inverts traditional teaching methods, delivering instruction online outside of class and moving 'homework' into the classroom.").

14. Berrett, *supra* note 12.

15. DuVivier, *supra* note 12, at 10480.

16. JACOB BISHOP & MATTHEW A. VERLEGER, THE FLIPPED CLASSROOM: A SURVEY OF THE RESEARCH 5 (2013), http://www.asee.org/public/conferences/20/papers/6219/view ("'Inverting the classroom means that events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa.'").

17. *Id.*; JESSICA YARBRO ET AL., EXTENSION OF A REVIEW OF FLIPPED LEARNING 5 (2014), http://flippedlearning.org/cms/lib07/VA01923112/Centricity/Domain/41/Extension%20of%20Flipped%20Learning%20Lit%20Review%20June%202014.pdf ("The terms 'flipped classrooms' and 'Flipped Learning' are not synonymous and it is a common mistake usually perpetuated in the opening paragraph of articles written on the topic. What is often defined as 'school work at home and home work at school' is overly simplistic and does not cover the range of active engagement within a flipped classroom using a Flipped Learning approach.").

matter.'"[18] By encouraging the development of innovative teaching methods, flipped learning also encourages and facilitates the use of new technologies and techniques to educate the class.[19]

Additionally, instead of assigning problems for students to solve alone as homework, the instructor guides students as they work through problems, or other interactive activities, during class as a whole.[20] This offers a number of benefits. First, "[t]he immediacy of teaching in this way enables students' misconceptions to be corrected well before they emerge on a midterm or final exam. The result, according to a growing body of research, is more learning."[21] Second, from an assessment perspective, the professor has the advantage of measuring student learning in the moment. Third, and most touted, students engage in active, collective learning as a whole. It is in this way of inverting the traditional in-class delivery of substantive information and at-home application of such substantive information with an at-home delivery of content and in-class application of that content that a class is flipped.

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18. YARBRO ET AL., *supra* note 17 (citation omitted); *see* Lemmer, *supra* note 10, at 465.

19. YARBRO ET AL., *supra* note 17 ("By moving from a flipped class to actively engaging in Flipped Learning, teachers are able to implement new or various methodologies into their classrooms."); *see also* Lemmer, *supra* note 10, at 465 ("[F]lipped classrooms use technology to invert the traditional teaching environment. Although there is no single model, the term is generally used for those class structures that use technology to deliver online instructional materials as preclass homework and then repurpose class time for individual or group lab work. The instructional materials become a study aid to help students complete the research assignment in the lab. During lab sessions, the professor serves as a coach or advisor, encouraging students in individual or collaborative efforts.").

20. Berrett, *supra* note 12 ("And when they are in class, students do what is typically thought to be homework, solving problems with their professors or peers, and applying what they learn to new contexts. They continue this process on their own outside class."); *Teachers "Doing the Flip" to Help Students Become Learners*, THE DAILY RIFF (May 13, 2011, 11:57 AM), http://www.thedailyriff.com/articles/teachers-doing-the-flip-to-help-students-become-learners-531.php ("[T]he teacher becomes the 'guide on the side' where students are using the class/school experience as a fully interactive experience WITH the teacher—instead of the teacher being the one-way traditional talking head.").

21. Berrett, *supra* note 12.

A. The History of Flipping

Flipped learning is less than a decade old. In 2007, two high school chemistry teachers at Woodland Park High School in rural Woodland Park, Colorado, Jonathon Bergman and Aaron Sams, began screencasting their lectures to students online.[22] Their goal was to keep those students who were absent or involved in extracurricular activities involved in learning the assigned material without falling behind.[23] Flipped classrooms quickly evolved beyond Woodland Park High School. "In 2012, Bergmann and Sams founded the Flipped Learning Network, a non-profit organization that seeks to help educators make the switch" from more traditional teaching methods to a flipped learning model.[24] The Flipped Learning Network developed the four pillars of flipped learning: flexible environment, learning culture, intentional con-

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22. Emily Atteberry, *"Flipped Classrooms" May Not Have Any Impact on Learning*, USA Today (Dec. 5, 2013), http://www.usatoday.com/story/news/nation/2013/10/22/flipped-classrooms-effectiveness/3148447/ ("The flipped classroom trend first took root in 2007 when high school teachers Jonathan Bergmann and Aaron Sams began offering their lectures in PowerPoint version online to students who missed class."); *The Teacher's Guide to Flipped Classrooms*, *supra* note 10 ("Many factors influenced the creation and adoption of the flipped classroom model. However, two specific innovators played a key role. Teachers Jonathon Bergman and Aaron Sams at Woodland Park High School in Woodland Park, CO, discovered software to record PowerPoint presentations. They recorded and posted their live lectures online for students who missed class."); HAMDAN ET AL., *supra* note 10, at 3 ("Two rural Colorado chemistry teachers, Jonathan Bergmann and Aaron Sams, are often referred to as the pioneers of Flipped Learning. Concerned that students frequently missed end-of-day classes to travel to other schools for competitions, games or other events, they began to use live video recordings and screencasting software in 2007 to record lectures, demonstrations, and slide presentations with annotations.").

23. *The Teacher's Guide to Flipped Classrooms*, *supra* note 10; Membrillo, *supra* note 10 ("Many factors influenced the creation and adoption of the flipped classroom model. However, two specific innovators played a key role. Teachers Jonathan Bergman and Aaron Sams at Woodland Park High School in Woodland Park, CO, discovered software to record PowerPoint presentations. They recorded and posted their live lectures online for students who missed class.").

24. Atteberry, *supra* note 22.

tent, and professional educator to help share this novel teaching method with others.[25]

Flipped classrooms were "made mainstream through the Khan Academy,"[26] although Khan, a supplier of free online education, does not adopt the term "flipped classroom" to describe its methods.[27] Instead, Maureen Suhendra, a member of Khan's school implementation team, explains the difference as follows:

> The flipped classroom in the traditional sense is that teachers are assigning videos for homework, and they'll come to class and work out problems together. Students are still all moving at the same pace. Khan Academy is much more about a customized learning experience—working on different math exercises at a different time. It's a vision is of a self-paced, customized learning experience.[28]

So Khan has adapted a flipped learning model to provide a personal, self-paced program of instruction similar to that provided by a tutor.[29] Whatever they call it, Khan has helped bring flipped learning to the forefront of modern American teaching methods.

The flipped classroom concept is drawing interest from a broad spectrum of educators. Research shows that "[t]eachers who are flipping their classes are not necessarily only new-to-the-profession teachers, or those with a high degree of computer skills

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25. *The Four Pillars of F-L-I-P*, FLIPPED LEARNING NETWORK (2014), http://flippedlearning.org/cms/lib07/VA01923112/Centricity/Domain/46/FLIP_handout_FNL_Web.pdf.

26. Lemmer, *supra* note 10, at 465 (citing *About*, KHAN ACADEMY, http://www.khanacademy.org/about (last visited Aug. 1, 2013)); *see* DuVivier, *supra* note 12 at 10480.

27. Karen Springen, *Flipping the Classroom: A Revolutionary Approach to Learning Presents Some Pros and Cons*, SCHOOL LIB. J. (April 1, 2013), http://www.slj.com/2013/04/standards/flipping-the-classroom-a-revolutionary-approach-to-learning-presents-some-pros-and-cons/#_ ("Khan, which offers free how-to videos, doesn't completely embrace the term 'flipped classroom.'").

28. *Id.* (quoting Maureen Suhendra, a member of Khan's school implementation team).

29. *Id.* ("The current educational system is too much of a 'one-size-fits-all model,' says Suhendra. Not the Khan Academy. . . . 'In essence, Khan Academy can become a personalized tutor for students.'").

and comfort with technology."[30] In fact, a 2014 study conducted by the Flipped Learning Network and Sophia Learning of 2,358 educators responding to 36 questions revealed that "42% of flippers have been teaching for 16 years or more."[31] Not surprisingly, math and science teachers were among the most likely to flip their classes (33% and 38%, respectively).[32] Researchers, however, were surprised to discover that the number of teachers of English or language arts flipping their classrooms had increased "from 12% in 2012 to 23% in 2014."[33] There is really no educational constituency that could not adopt flipped learning if it chose to do so.

B. The Perceived Benefits of Flipping

The potential benefits of flipped learning are numerous, contributing to its popularity. Although there is a great deal of cross-over, most of these perceived benefits can be categorized as either improving learning outcomes[34] or satisfying the goals of modern educational administrations.[35] Flipped learning arguably enhances learning outcomes by allowing students to work somewhat at their own paces by reviewing online content as many times as they would like,[36] correcting student misunderstanding in the moment,[37] increasing student-teacher interaction in an ever-growing class,[38] and enhancing critical thinking skills.[39] It also helps educators meet the challenges that modern administrations impose by providing countless opportunities for assessment of student learning[40] and efficiently offering student-teacher interaction despite large class sizes in a way online competitors cannot,[41]

30. YARBRO ET AL., *supra* note 17, at 6.
31. *Id.*
32. *Id.*
33. *Id.*
34. Berrett, *supra* note 12; *see infra* notes 37–63 and accompanying text.
35. *See infra* notes 37–63 and accompanying text.
36. *See* Berrett, *supra* note 12.
37. *See* DuVivier, *supra* note 12.
38. *See The Teacher's Guide to Flipped Classrooms*, *supra* note 10.
39. *See infra* note 50.
40. *See* Berrett, *supra* note 12.
41. *See* Springen, *supra* note 27.

while still enabling students a modified self-paced learning module similar to those made attractive by online education.[42]

One of the key factors driving increased adoption of the flipped classroom is poor learning outcomes from "the traditional one-size-fits-all model of education."[43] This concern is compounded by ever-growing class sizes.[44] "One of the main advantages of a flipped classroom is that it allows students to play back, as many times as they need, those parts of lectures they did not understand the first go-round."[45] Additionally, collective class time is not wasted on one student who needs greater clarification; the confused student can replay the online content of a flipped class as often as he or she wishes without delaying the rest of the class.[46] This ability to watch the online instruction when and as often as the student chooses empowers students with "greater control over the pace of instruction" while holding students accountable for their own learning.[47] In my personal experience, I had many students inform me how valuable they found this increased sense of control to be.

Additionally, flipped learning enhances faculty interaction with students by creating space during scheduled class meetings for dialogue. Moreover, "[t]he immediacy of teaching in this way enables students' misconceptions to be corrected well before they emerge on a midterm or final exam. The result, according to a growing body of research, is more learning."[48] Correcting student misunderstanding in real time is a distinct advantage offered by flipped learning.

One of the most beneficial aspects of flipped learning is the challenge it presents to students to think critically, in the moment, during class as they apply what they learned before class to prob-

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42. *See infra* note 58.

43. *The Teacher's Guide to Flipped Classrooms*, *supra* note 10.

44. Sam Dillon, Tight Budgets Mean Squeeze in Classrooms, N.Y. TIMES (Mar. 6, 2011), http://www.nytimes.com/2011/03/07/education/07classrooms.html.

45. DuVivier, *supra* note 12, at 10480; Springen, *supra* note 27.

46. Springen, *supra* note 27.

47. Benjes-Small, *supra* note 13.

48. Berrett, *supra* note 12 ("More important, 'you can get better student-learning outcomes.'" (quoting Harrison Keller, vice provost for higher-education policy at University of Texas at Austin)).

lems or exercises posed to the group. In a traditional class, "[s]tudents have only a passive role in the lecture process, and cognitive psychologists have found that audiences have difficulty remembering information if it is conveyed only through listening."[49] Unlike in a traditional course, "the cognitive strain that flipping imposes on students accounts for much of its success—and the resistance it engenders."[50] Several researchers have concluded that flipped learning creates such cognitive strain to the benefit of students.[51]

Karen Rhea is a lecturer and director of the introductory mathematics program at the University of Michigan at Ann Arbor. Along with two colleagues, she has been studying whether students learning calculus in a flipped classroom have made greater gains in understanding the concepts than those students learning in a traditional lecture class. The program administered:

> concept inventories to students before they started calculus and after they finished, and calculated the difference relative to the maximum gain they could have made. Students in Michigan's flipped courses showed gains at about twice the rate of those in traditional lectures at other institutions who took the same inventories. The students at Michigan who fared worst—a group of 12 who were at risk of failing the course—showed the same gain as those who demonstrated the largest increase in understanding from traditional lectures elsewhere.[52]

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49. DuVivier, *supra* note 12.

50. Berrett, *supra* note 12. Although researchers agree that flipped learning does challenge critical thinking, other teaching methods may similarly challenge students. *Id.* ("Ultimately that strain is what is most important, not whether the course is flipped, says Carl E. Weiman, associate director of the White House Office of Science and Technology Policy. He has documented gains when relatively inexperienced physics graduate students and postdoctoral researchers lecture hundreds of students but stop intermittently to quiz and give feedback on the students' understanding of key concepts.").

51. *See infra* notes 53–63 and accompanying text.

52. Berrett, *supra* note 12.

A similar study at Harvard University focused on the learning gains of physics majors and nonmajors enrolled in physics.[53] The "results from using peer instruction show that, on the force concept inventory, nonmajors who take [the flipped physics] class outperform physics majors who learn in traditional lectures."[54]

In 1979, before web-based technology existed to flip a class as described above, Edward Kimball and Larry Farmer conducted an experiment at Brigham Young University J. Reuben Clark Law School wherein Kimball taught three sections of Evidence, employing a different teaching method in each. In the first section, Kimball used the traditional method and assigned a conventional casebook. In the second section, he assigned reading from a treatise and prepared problems that the class would then discuss in class. In the final section, he assigned reading from an Evidence treatise, used a computer program for students to work through the same prepared problems and to compare his own prepared answers to those problems, and offered periodic, voluntary class sessions to answer student questions. All students were given the same final exam. The results across all three sections were statistically insignificant.[55]

Flipped learning involves what is often referred to as "blended" instruction mixing online learning with face-to-face instruction. Studies show that such blended learning—whether in the form of a flipped classroom or otherwise—generates "'deeper learning experiences for the students.'"[56] In September 2010, the U.S. Department of Education ("DOE") compared the effectiveness of face-to-face teaching and online instruction.[57] "Based on the analysis of more than fifty empirical studies of online learning

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53. *Id.*

54. *Id.*

55. Todd E. Pettys, *The Analytic Classroom*, 60 BUFF. L. REV. 1255, 1276–77 (2012) (citing Edward L. Kimball & Larry C. Farmer, *Comparative Results of Teaching Evidence Three Ways*, 30 J. LEGAL EDUC. 196 (1979)).

56. Lemmer, *supra* note 10, at 466–67 (quoting Rita Shackel, *Beyond the Whiteboard: E-Learning in the Law Curriculum*, 12 QUEENSLAND U. TECH. L. & JUST. J. 105, 109–10 (2012)).

57. *Id.* at 466 (citing Barbara A. Means et al., *Evaluation of Evidence-Based Practices in Online Learning*, U.S. DEP'T OF EDUC. (Sep. 2010), http://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf); *see* Pettys, *supra* note 55, at 1303–05.

conducted between 1996 and 2008, the report [of the DOE's comparative research] found purely online education 'as effective as classroom instruction, but no better.'"[58] The DOE's research varied, however, in studies comparing purely face-to-face instruction with a blend of online learning and face-to-face instruction.[59] The DOE research "found an average of thirty-five percent stronger learning outcomes for students taught in a blended format."[60] Blended courses are "'more successful and increase student satisfaction with the learning experience.'"[61] Interestingly, the DOE report concluded that

> there is nothing about a blend of online and face-to-face instruction per se that should improve student learning. Rather, the significantly improved outcomes for students taught in blended settings may flow simply from the fact that those students are exposed to more instructional materials than students whose primary encounters take place in a classroom.[62]

The blended flipped learning format necessarily provides students with more educational materials than the traditional class by providing more online content in advance of class, as well as greater interaction during class.

Not only may flipped learning improve student learning outcomes, it may also solve some educational challenges posed by institutional administrators. Specifically, flipped learning may respond to pressure from university administrations, accrediting bodies, and other groups for increased assessment of student learn-

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58. Lemmer, *supra* note 10, at 466 (citing Means et al., *supra* note 57); *see* Pettys, *supra* note 55, at 1303–05.

59. Lemmer, *supra* note 10, at 466 (citing Means et al., *supra* note 57); *see* Pettys, *supra* note 55, at 1303–05.

60. Lemmer, *supra* note 10, at 466 (citing Means et al., *supra* note 57); *see* Pettys, *supra* note 55, at 1303–05.

61. Lemmer, *supra* note 10, at 466 (quoting Shackel, *supra* note 56, at 109–10).

62. Lemmer, *supra* note 10, at 466 (citing Means et al., *supra* note 57); *see* Pettys, *supra* note 55, at 1303–05.

ing.[63] In a flipped classroom, teachers witness student understanding, or the lack thereof, during class and can deal with it appropriately by making adjustments in real time. "[F]rustrations that students experience or incorrect learning patterns they develop can be reduced when students work on problems in the classroom while being guided by teachers or peers, as dictated by the flipped classroom model."[64] Because flipped learning provides daily opportunities for informal assessment, problems can be addressed immediately, before they manifest themselves in student performance on less frequently assessed examinations.

In addition to demanding greater assessment of student learning to improve the "product" schools offer to students, academic institutions are increasingly facing budget cuts.[65] Modern educational programs have consistently responded to tighter budgets by increasing class sizes and the student-to-teacher ratio. To the detriment of the student, economic forces mandate that class sizes cannot be reduced to allow greater interaction between student and teacher.[66] According to Harrison Keller, vice provost for higher-education policy at the University of Texas at Austin, however, flipped learning "allows colleges, particularly large research institutions with big classes, to make the traditional lecture model more productive . . . . 'If you do this well, you can use faculty members' time and expertise more appropriately, and you can also use your facilities more efficiently.'"[67] Flipped learning, thus, may mitigate the harmful impact of increased class size on student learning.

Flipped learning also helps educators respond to the demands of administrators to become more competitive in an educa-

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63. Berrett, *supra* note 12.

64. DuVivier, *supra* note 12, at 10480.

65. *See* Joyce E. McConnell, *The Future of Legal Education and the Profession*, W. VA. LAW., July–Sept. 2013, at 12; Ashby Jones & Jennifer Smith, *Amid Falling Enrollment, Law Schools are Cutting Faculty*, WALL STREET J. (Jul. 15, 2013, 4:39 PM), http://www.wsj.com/articles/SB10001424127887323664204578607810292433272.

66. Berrett, *supra* note 12.

67. Berrett, *supra* note 12 (quoting Harrison Keller); *see also* Bishop, *supra* note 16, at 6 ("The theoretical foundations used for justifying the flipped classroom typically focus on reasons for not using classroom time to deliver lectures.").

tional landscape that now offers a great deal of information to students working at their own pace for free online, for example, through MOOCs and online institutions.[68] "'I see a paradigm shift, and it's coming soon,' says Michael S. Palmer, an associate professor of chemistry and assistant director of the Teaching Resource Center at the University of Virginia. 'Content is not going to be the thing we do. We're going to help unpack that content.'"[69] Traditional educators are no longer the only sources of substantive information, but they have become the most expensive. Thus, providing students with an understanding and mastery of that information is the advantage that traditional educators hold over online for-profit institutions and free Internet sources. Harvard Physicist Eric Mazur suggests that: "Simply transmitting information should not be the focus of teaching; helping students to assimilate that information should."[70] Flipped learning allows educators to provide the information to students online in advance of class and then dig deep to struggle towards understanding and mastery together as a collective with the teacher guiding the way.

C. Perceived Concerns About Flipping

Despite the many cited potential benefits of flipped learning, educators have identified a variety of concerns preventing its uniform adoption. There are several criticisms of flipped learning, including that: embarking upon such an endeavor is extremely labor intensive;[71] flipped learning feels uncomfortable to educators, putting them on the spot in the moment to respond to unpredictable situations that may arise in class;[72] students who perceive flipped learning as more work will punish teachers with bad stu-

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68. Berrett, *supra* note 12. "MOOC" stands for Massive Open Online Course, wherein tens of thousands of students may enroll in a class, either for free or for a tuition-based fee, offered by a professional MOOC provider, often with the assistance or cooperation of more traditional brick-and-mortar colleges and universities. Juliana Marques & Robert McGuire, *What is a Massive Open Online Course Anyway? MN+R Attempts a Definition*, MOOC NEWS AND REVIEWS (June 7, 2013), http://moocnewsandreviews.com/what-is-a-massive-open-online-course-anyway-attempting-definition/#ixzz3UHrShTSm.

69. Berrett, *supra* note 12 (quoting Michael S. Palmer).

70. *Id.* (quoting Eric Mazur).

71. *See infra* notes 77–82 and accompanying text.

72. *See infra* note 83 and accompanying text.

dent evaluations;[73] the online materials utilized are too passive compared to the traditional presentation of those materials in class;[74] the flipped classroom involves so much student involvement that it conflicts with the Socratic Method;[75] and even that flipped learning is simply the Socratic Method in new packaging.[76]

There is no doubt that flipping one's class requires an investment in redeveloping the course to replace the in-class presentation of material with similar content available online. "Teachers and site administrators continued to be in agreement that the following hindrances may be keeping them from flipping their classrooms: . . . needed instruction on how to 'make' or 'find high quality videos;' and how to 'best utilize' the additional classroom time."[77] At the very least, flipping tasks the teacher with identifying existing teaching material suitable for relaying the content and making that available electronically.[78] At worst, faculty would develop their own online materials for electronic distribution to the class.[79] In either case, those implementing flipped learning take on the additional burden of planning interactive activities, problems, or course discussions on which the class can focus during the class meeting.[80] The initial attempt to flip a course is labor intensive and this concern prevents some educators from adopting this teaching method.[81]

Related to these concerns about the increased work required to flip a course are those that student expectations of teacher availability will similarly increase. By making content available online at the student's leisure, some are concerned that teachers will be forced to answer students' additional questions about the

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73. *See infra* notes 84–87 and accompanying text.
74. *See infra* notes 88–90 and accompanying text.
75. *See infra* notes 91–93 and accompanying text.
76. *See infra* note 94 and accompanying text.
77. YARBRO ET AL., *supra* note 17, at 15.
78. *Id.*
79. *Id.*
80. *Id.*
81. Berrett, *supra* note 12 ("It can also be very labor-intensive for faculty members who do not have teaching support, she adds, if it requires a professor to read questions that students submit before class (which is characteristic of just-in-time teaching). 'For a normal, straight-ahead professor, there's a steep learning curve,' Ms. Franklin says.").

online materials beyond their expected work day, as students may pose questions electronically any time they find convenient.[82] This concern focuses on the perception of universal accessibility of the teacher because the teacher's materials are universally accessible. Of course, such notions arise anytime a teacher is digitally available, either by posting an online syllabus or responding to email. They can be easily defeated with clear communication of a teacher's appropriate boundaries.

Moreover, flipped learning demands flexibility from those implementing it and that is a difficult hurdle for some teachers. Where an instructor in a traditional class may have relied on preplanned notes to disseminate information to students pursuant to that plan, the flipped classroom invites much greater spontaneity. The interactive nature of the class time requires the faculty member to be flexible even when put on the spot in a situation the educator did not predict. Melissa E. Franklin, chair of Harvard's physics department, states that several "colleagues have tried flipping . . . but few have stuck with it. It demands that faculty members be good at answering students' questions on the spot, even when their misconceptions are not yet clear because they are still processing the information."[83] While some educators may view their inflexibility as a challenge flipped that learning may help them overcome, others may simply be ill-suited for the flipped format.

Because of the labor-intensive nature of flipped learning and the challenge to a teacher's flexibility that it presents, several educators are concerned that they risk receiving negative student evaluations that could affect their promotion, tenure, and merit salary increase decisions.[84] Such concerns are apparently valid, as the "average score on a student evaluation of a flipped course is about half what the same professor gets when using the traditional lecture."[85] Student resistance to flipped learning may be attributable to the increased amount of material presented outside of class, perceived by students as more work or extra class time, or the increased cognitive challenge offered within the classroom.[86] Many

82. Springen, *supra* note 27.
83. Berrett, *supra* note 12 (quoting Melissa E. Franklin).
84. *Id.*
85. *Id.*
86. *See supra* text accompanying note 50.

students complain that flipped educators should "just teach,"[87] demonstrating their expectations from and past experiences with more traditional educational styles and their misunderstanding of the instructor's goals in implementing flipped learning.

Some critics of flipped learning complain that online material presented in lieu of in-class presentation is too passive.[88] According to Lisa Nielsen, author of *Teaching Generation Text*, "Listening to a lecture is nothing new. I just don't believe it's the most effective way to learn."[89] It is certainly possible that an educator may post passive lectures online. In such a case, the professor was probably replacing passive lectures in class with the passive lectures online and, at least hopefully, adding more active learning to the class meeting, which should still be an improvement over a live, passive lecture. Moreover, while this valid criticism may apply to some online materials, it is certainly overcome where more innovative online materials are utilized. Critics continue, however, noting that "not everything is flippable. 'Nothing is going to replace the experience of being a member of an audience that has a group discussion or debate,' says *School Library Journal* blogger Joyce Valenza."[90] It is probably true that not everything is flippable, but the more active engagement promoted in the flipped class meeting should provide exactly the experience of being a member of a group discussion or debate.

Some educators resist flipped learning in favor of retaining the Socratic Method to engage students. These teachers believe that a flipped classroom sacrifices actual instruction in order to increase opportunities for student collaboration and activities generated and led by students.[91] This criticism applies to those flipped classes featuring student interaction with minor faculty involvement. Proponents of flipped learning, however, would suggest that a key role for teachers "'is to lead from behind.' In other words, the teacher has the task of 'observation, feedback and assessment'

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87. Robert Talbert, *Three Critical Conversations Started and Sustained by Flipped Learning*, FAC. FOCUS NEWSL. (Mar. 2, 2015), http://ww1.facultyfocus.com/eletter/profile/1/216.html?ET=facultyfocus:e216:281629a:&st=email.

88. Springen, *supra* note 27 ("The 'home' portion of the flipped classroom can be too passive for many educators' taste.").

89. *Id.*

90. *Id.*

91. HAMDAN ET AL., *supra* note 10, at 11.

and guiding the learners' thinking, in the best spirit of the Socratic Method."[92] Similarly, critics complain that flipped learning "undervalues the power of good, engaging, face-to-face Socratic teaching."[93] This concern certainly applies to those engaging Socratic teachers; but for those less successful at coaxing a productive Socratic dialogue, blended methods such as flipped learning could offer a more effective alternative.

Yet another critique of flipped learning posits that it is not a new or novel teaching method, even suggesting that it is simply a retooled version of the Socratic Method.

> Professors have flipped courses for decades. Humanities professors expect their students to read a novel on their own and do not dedicate class time to going over the plot. Class time is devoted to exploring symbolism or drawing out themes. And law professors have long used the Socratic method in large lectures, which compels students to study the material before class or risk buckling under a barrage of their professor's questions.[94]

Admittedly, flipped learning may be a modern take on the Socratic Method. Law faculties have successfully implemented the Socratic Method as a primary teaching method for nearly two centuries. Updating a successful teaching method by infusing the benefits of modern technology may prove to enhance students' learning outcomes.

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92. *Id.*

93. *Id.*

94. Berrett, *supra* note 12; *see also* Springen, *supra* note 27 ("Aside from the technology involved, it's not necessarily a new idea. 'In the 1970s, when I was a classroom English teacher, I flipped my classroom, and I didn't even know it,' says Doug Johnson, the director of media and technology for the Mankato Area Public Schools in Minnesota. 'I'd ask my kids to read the text at home, and then I'd use the class time to discuss the lesson. Now, instead of asking kids to read, we're asking them to watch videotape lessons. I sense this is something like old wine in a new bottle.'").

III. THE ROLE OF FLIPPED LEARNING IN LAW SCHOOL PEDAGOGY

A. The Langdellian Model

Law school is a fairly modern concept. Because law is a profession, "legal training was viewed as entirely vocational, not academic, in nature" in pre-Revolutionary America.[95] Legal training took the form of attendance at Inns of Court meetings in London, where prospective attorneys would gain practical training.[96] Additionally, future lawyers accepted apprenticeships with practicing attorneys, in the earliest form of experiential learning.[97] Apprenticeships gained in popularity at the turn of the 18th century as the more common method of legal training, while American travel to Inns of Court meetings in London became less palatable for obvious reasons.[98]

In approximately 1784, private law schools began to emerge to meet the academic needs of a growing bar.[99] In 1817, Harvard University founded Harvard Law School—the oldest continually operating law school in the country.[100] Harvard named Christopher Langdell dean of the law school in 1870. Langdell is credited with developing the framework for modern legal education, including the implementation of the Socratic Method to decipher the law from appellate decisions.[101]

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95. Michele R. Pistone & John J. Hoeffner, *No Path But One: Law School Survival in an Age of Disruptive Technology*, 59 WAYNE L. REV. 193, 204 (2013).

96. *Id.*

97. *Id.* at 204–05.

98. *Id.* at 205 n.47.

99. *Id.* at 206.

100. *Id.*

101. *Id.* at 207 ("[I]t can accurately be said that the modern law school was born during Langdell's quarter century as dean. For generations of law students, for instance, the case method and the Socratic method of teaching have seemed essential—or at least ever-present—characteristics of law teaching, but they became a standard part of the fabric of law school life only during or slightly after Langdell's tenure."); DuVivier, *supra* note 12, at 10476 ("Christopher Columbus Langdell is often credited with sparking the first revolution in law school teaching when he introduced the case method at Harvard Law School in the early 1870s.").

Langdell approached legal education as any other academic field of study. He stated, "[c]onsidered as a science," law "consists of certain principles or doctrines. To have a mastery of these as to be able to apply them with constant facility and certainty to the ever-tangled skein of human affairs, is what constitutes a true lawyer."[102] To foster this academic approach, Langdell developed the case method of learning the law and the Socratic Method for teaching it.[103]

> In the case method, leading cases or case excerpts are assembled into a case book. Before each class, students are assigned a selection of cases to review. Then, during class, the professor calls on individual students to present their briefs of a given case. The professor guides the students through a question-and-answer process to ensure the class appreciates the holding in each case and its significance to the body of law being studied.[104]

These advances marked a significant reform to legal education at the time.[105]

Langdell's Socratic Method offered a more active approach to learning, requiring students to think critically on their feet.[106] As discussed in Part II above, the passive dissemination of information is a less effective teaching method.[107] "Cognitive psychology shows that if new knowledge is processed more deeply and

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102. Pistone & Hoeffner, *supra* note 95, at 208.

103. *Id.* at 207–08; DuVivier, *supra* note 12, at 10476.

104. DuVivier, *supra* note 12, at 10476; *see also* Pistone, *supra* note 95, at 208 ("Langdell's 'scientific approach [would] infer the corpus of general legal rules from the reasoning used by courts' and then 'use such reasoning to predict outcomes in future cases.'").

105. *See* DuVivier, *supra* note 12, at 10477 (citing SUSAN A. AMBROSE ET AL., HOW LEARNING WORKS; SEVEN RESEARCH-BASED PRINCIPLES FOR SMART TEACHING (2010)).

106. *See id.* at 10476.

107. *See supra* notes 50–52 and accompanying text.

actively, it is much more likely to be retained and retrieved."[108] Through the Socratic Method,

> Instead of passively listening to lectures and taking notes, students were now expected to read real cases and derive principles of law for themselves through Socratic questioning. Thus, to the extent the Socratic Method is a discussion, it would track with research that shows discussion methods are more effective than lectures for achieving the main goals of student retention, transfer of knowledge to new situations, development of problem solving, thinking, attitude change, and motivation for additional learning.[109]

It seems, therefore, that the Socratic Method offered a significant improvement over traditional lectures.[110]

The vast majority of law schools have maintained this casebook and Socratic Method approach to teaching for nearly two centuries—and with good reason. "[T]he Socratic methodology used in most first-year courses was one of the few aspects of law school teaching praised in Educating Lawyers, the 2007 study of law schools conducted by the Carnegie Foundation for the Advancement of Teaching."[111] Because it demands active learning, the Socratic Method remains an effective teaching pedagogy in modern classrooms.

B. Post-Modern Legal Education

Despite the advancement of the case method and Socratic Method, they have become so ingrained into the fabric of law school pedagogy that the legal academy has made little room for potentially more effective post-modern pedagogical reforms.

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108. DuVivier, *supra* note 12, at 10477 (citing SUSAN A. AMBROSE, HOW LEARNING WORKS; SEVEN RESEARCH-BASED PRINCIPLES FOR SMART TEACHING (2010)).

109. *Id.* at 10476.

110. *Id.* at 10477.

111. W. Warren H. Binford, *New Ideas in Law and Legal Education: Envisioning a Twenty-First Century Legal Education*, 43 WASH. U. J.L. & POL'Y 157, 174 (2013).

While the Socratic Method and case method may have been significant improvements upon the teaching methods employed in early nineteenth century law schools, it is possible that other teaching methods developed in the last two centuries may offer even greater progress. Specifically,

> the way many professors employ the Socratic Method may undermine its value. The only student that is actively learning is the one who is under the inquisitional fire of the professor's barrage of questions. The exchange may still be a relatively passive learning experience for the rest of the students in the class who are simply listening and trying to glean the message they should take from the repartee between the professor and their classmate.[112]

Additionally, after the commercialized standardization of casebooks by publishers, "most twentieth century law professors subscribed to the static, lifeless materials developed by third parties and students were compelled to buy and read those materials regardless of price or relevance. To this day, the case method and the standardized casebook dominate legal education methodology in the United States."[113] With modern technological advances, there is certainly room to improve upon both the case method and the Socratic Method. "The Digital Revolution offers twenty-first century law professors the opportunity to return to the customized, engaged curricula exemplified by the revolutionary pedagogical methods of Dean Langdell and his colleagues."[114]

Technology is already forcing modernization of the case method. In recent years, "publishers again are compelling change in legal education; but this time, they are moving away from the standardized, hardbound casebook and utilizing digital technologies to modularize, diversify, and enrich legal education materials."[115] As the case method enters the digital age, so too may the

112. DuVivier, *supra* note 12, at 10477.
113. Binford, *supra* note 111, at 160–61.
114. *Id.* at 162.
115. *Id.* at 161.

Socratic Method. Thus, flipped learning may be a pedagogical reform ripe for adoption by the legal academy.

In recent years, law schools have not sat on the sidelines when opportunities to adapt technology to the classroom have arisen.

> One could argue that legal educators pioneered digital education when Harvard Law School and the University of Minnesota Law School incorporated the Center for Computer-Assisted Legal Instruction (CALI) over three decades ago in 1982. Today, CALI hosts over 950 online interactive tutorials available in more than thirty-five law subjects. Nearly every law school in the United States is a member of CALI.[116]

One would not expect law schools to shy away from the advantages offered by flipped learning, especially in light of its similarities to the Socratic Method, which has proven particularly well-suited for the law school classroom.

As discussed above, flipped learning shares some similarities with the Socratic Method by presenting students with material in advance of class and then delving deeply into that material during class.[117] Moreover, it can blend easily with the case method; there is no reason for legal educators to stop assigning appellate decisions to their students in advance of class along with other online materials. In fact, technology and online resources already exist to aid law professors in flipping their classrooms. Specifically, "a small group of law school professors founded 'LegalED,' informally described as a Khan Academy for law schools. LegalED aims to move law school content online through recorded lectures so law students can watch the lectures at their convenience as many times as they needed."[118] LegalEd provides faculty with instruction on how to flip a course and develop personalized online

116. *Id.* at 171.
117. *See supra* note 94 and accompanying text.
118. Binford, *supra* note 111, at 172–73.

content for distribution to students and serves as a free online exchange of digital materials for class distribution.[119]

> By using Web-based technologies – technologies that are likely to become pervasive in mainstream higher education regardless of our initial eagerness to embrace them – faculty can expose students to some of their courses' foundations and frameworks before they enter the classroom. Confronted then with the need to rethink the chief purposes of live classroom sessions, faculty can focus on developing activities that build on those foundations and frameworks in ways aimed squarely at strengthening students' analytic capacities and solidifying students' understanding of the course material in the process.[120]

With such technological resources available, one would expect legal educators to be at the forefront of its development.

Nonetheless, law schools have been slow to adapt to flipped learning. In fact, "[i]n a spring 2013 conversation with Rishi Desai, a content producer from the Khan Academy, it was revealed that only one law professor had contacted the Khan Academy in the seven years since the organization was founded."[121] It seems that the legal academy is comfortable letting others advance the cutting edge. "While professors from Harvard Medical School and the Stanford University School of Medicine are reaching out to the Khan Academy to explore opportunities for collaboration, the legal academy has shown no interest, according to Desai."[122] One suggested reason for this stagnation

> is that law professors are smart enough to let other faculties serve as the guinea pigs in the development of, and experimentation with, digital tools and methodology in order to conserve limited law school resources. According to Paul McGreal,

119. *See* LegalED, http://legaledweb.com (last visited Mar. 12, 2016).
120. Pettys, *supra* note 55, at 1305–06.
121. Binford, *supra* note 111, at 165.
122. *Id.* at 166.

> Dean of the University of Dayton School of Law, "A lot of these teaching methods require more resources from law schools and teachers. Let's make sure they work."[123]

Given the research demonstrating the positive effect on learning outcomes of blended learning employed in other disciplines,[124] it may be time for the legal academy to stop watching others flip their courses and start doing it themselves.

Another suggested reason for the legal academy's resistance to flipped learning may be its complacency with an effective and proven pedagogy—the Socratic Method. "The disinterest of legal educators in new technologies can partially be explained by the legal academy's deep commitment to a culture and tradition of the Socratic methodology and institutional values that emphasize scholarship far above teaching."[125] For the reasons explained above, however, the past success of the Socratic Method should not be to the exclusion of further progress. In a time when law school applications are down nationally by over twenty percent,[126] it may be time for the legal academy to consider changing the way it does business.

IV. THE CIVIL PROCEDURE EXPERIMENT

A. Spring 2013: A Traditional Approach

During the Spring semester of 2013, I taught Civil Procedure II as I had in recent years. I assigned readings from four texts: *Civil Procedure: Cases & Materials*, by Jack H. Friedenthal, Arthur R. Miller, John E. Sexton, & Helen Hershkoff;[127] *2012–2013 Civil Procedure: Supplement*, by Jack H. Friedenthal,

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123. *Id.* at 167.

124. *See supra* notes 52–62 and accompanying text.

125. Binford, *supra* note 111, at 167.

126. Karen Sloan, *Law School Enrollment Continues Historic Decline*, THE NAT'L L. J. (Dec. 16, 2014), http://www.nationallawjournal.com/id=1202679988741/.

127. JACK H. FRIEDENTHAL ET AL., CIVIL PROCEDURE: CASES & MATERIALS (West, 10th ed. 2009).

Arthur R. Miller, John E. Sexton, & Helen Hershkoff;[128] *A Documentary Companion to A Civil Action,* by Lewis A. Grossman & Robert G. Vaughn;[129] and *A Civil Action,* by Jonathan Harr.[130] The course was the mandatory two-credit counterpoint to Civil Procedure I which the same students had taken from me in the Fall of 2012. Civil Procedure II covered the following subjects: cross-claims, joinder, impleader, class actions, discovery, summary judgment, voluntary dismissal, judgment as a matter of law, res judicata, and collateral estoppel.

I presented students with the material in a style common to many traditional law school courses. Before class, I assigned readings from the Friedenthal casebook and supplement, and asked students to consider problems and discussion questions from Grossman and Vaughan's *A Documentary Companion*. During class, I would employ the Socratic Method[131] to discuss the material, posing critical questions to students to guide our discussion. Information I might have discussed in a lecture was instead embedded into the discussion questions (and, hopefully, the students' answers thereto). When time permitted, we walked through the questions raised in *A Documentary Companion* to discuss the application of the law to a different, but familiar, set of facts. Unfortunately, time did not always permit, especially in 2013 when my class hours had been cut from three to two to accommodate curricular reform. I found myself unable to engage in the drafting exercises, role plays, and discussions that extra credit hour had previously afforded.

B. Spring 2014: The Flipped Classroom

By the Spring semester of 2014, I had already taught the students enrolled in Civil Procedure II for a full semester in Civil Procedure I. I assigned readings from the same texts that I had used the previous year,[132] except that I assigned an updated *Supplement* by the same authors. We covered the same subjects as we

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128. JACK H. FRIEDENTHAL ET AL., 2012–2013 CIVIL PROCEDURE: SUPPLEMENT (West 2012).

129. LEWIS A. GROSSMAN & ROBERT G. VAUGHN, A DOCUMENTARY COMPANION TO *A CIVIL ACTION* (Foundation Press, 4th ed. 2008).

130. JONATHAN HARR, A CIVIL ACTION (1996).

131. *See supra* notes 103–05 and accompanying text.

132. *See supra* notes 127–30 and accompanying text.

had in the previous year, as well as counterclaims. I posted reading assignments from the casebook and supplement, as well as problems, discussion questions, drafting exercises, and role plays based loosely from *A Documentary Companion*, in advance of class. The course material was nearly unchanged from the previous year. Instead, I changed my method of delivering the material to students dramatically.

In Spring 2014, I flipped my Civil Procedure II course. In addition to posting reading assignments and problems in advance of class, I posted my PowerPoint slides with my own voiceover lecture online. Not only was I not hiding the ball, I handed it to them. Students could view my ten to twenty minute presentations before they tackled the reading assignments and problems, after they read the assignments, or both. The expectation was that they would arrive in class with a pretty good understanding of the material. We would spend a few minutes in class addressing any questions that arose before class. Then, we turned our attention to the problems, discussion, and exercises.

We spent approximately thirty-five to forty minutes applying theoretical procedural concepts to problems in a real case[133]—every class. I never had the problem of running out of time to cover the assigned problems or exercises. In fact, I had to assign more problems and exercises to take full advantage of the extra class time now available to me. We worked through the problems with me as a guide posing questions and follow-up questions to students in a manner quite similar to the Socratic Method. Sometimes, the students formed "law firms" to complete exercises in small groups. By the end of class, in theory, students had answers to the problems, had an understanding of the reasoning involved in solving the problems, and had exercised some critical thinking skills to get there. If students needed further clarification of an issue, they could review my online presentation again (from immediately after class until the final exam) and, of course, visit my office.[134]

Class meetings in the flipped class were invigorating for me as an educator. Each flipped class was a new opportunity for

133. Anderson v. Cryovac, Inc., 862 F.2d 910 (1st Cir. 1988).

134. While I did not keep records of the number of students visiting me during office hours, I will note that I did not notice any increase or decrease in those visits.

me to creatively challenge students in a fresh way, which made preparing for class exciting. I was able to implement problems, role plays, drafting exercises, and group exercises that I had read about for years and, in some instances, recently cut from my course to accommodate the time constraints of curricular reform—all within one semester. Teaching in a flipped learning environment was fun for me.

Additionally, I was convinced at the end of every class that my students had learned more than I had been able to teach other classes in years past using a more traditional approach to teaching. Objectively, I knew that I had provided my students with more learning material than before, but I based my suspicions of greater learning on more than that. My ability to assess student learning in the moment and adjust in real time to help fill in gaps in student understanding or simply to spend more time on an issue troubling students certainly contributed to my confidence. Moreover, watching students collectively work through problems and exercises by applying the substantive material they had tackled independently convinced me that we had gone deeper into the material than I had ever gone before. Of course, these are my subjective impressions of student learning; I concluded that students had learned more and that they had had more fun doing it.

C. The Final Exam

Truth be told, the idea of empirically comparing student learning in my flipped classroom in 2014 with that in my traditional class in 2013 did not occur to me when I set out to flip my course. Accomplishing what initially appeared to me to be a nearly insurmountable task—the act of flipping the course—was my solitary goal from the outset. About thirteen weeks into the semester, however, the suggestion arrived from Professor Andrea Curcio of Georgia State University College of Law in response to a blog post I authored on LegalED.[135] She suggested that I administer an exam identical in part to the previous year's exam and compare the results. This article is the result of heeding her brilliant advice.

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135. Katharine Schaffzin, *Reflections of a First-Time Flipper*, LEGALED (Apr. 21, 2014), http://legaledweb.com/blog/2014/4/21/reflections-of-a-first-time-flipper-by-katherine.

Although I presented the course material quite differently in 2014 than I had in 2013, the subjects I covered and the reading assignments upon which I relied were virtually identical. To compare the learning outcomes of the students in the different learning environments, I administered a final examination in 2014 that was identical to the 2013 exam in fifty percent of the points awarded. Specifically, I repeated ten of the twenty multiple choice questions in 2014 that I had included in the 2013 exam. I also repeated one essay question in 2014 that I had used in 2013. I compared the learning outcomes of one class to the other on these identical questions to note if there was any discernible difference in performance.

V. THE RESULTS

Because my teaching methods differed so drastically from one year to the next, I hypothesized that I would see a significant improvement of student performance in 2014 over that in 2013. After all, the students in my flipped course received more educational material than those in my traditional class, I implemented blended instruction, rather than offering face-to-face or online exclusive content, and class was more active, interesting, and fun. All the empirical data supported my hypothesis.[136] Moreover, I walked out of every class in the flipped format confident that we had gone deeper into the material than I had ever gone in my traditional course.[137]

The data from my small empirical study, however, did not support my hypothesis. There was no statistical difference in the students' performance from one year to the next, despite the vastly different teaching methods I had employed. Any change in student performance on my exams from 2013 to 2014 was statistically insignificant. This held true for exam performance on both the essay[138] and multiple-choice[139] portions of the exams when considered in isolation.

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136. *See supra* notes 52–62 and accompanying text.

137. *See supra* Section IV.B.

138. The result of a T-Test with two tails and unequal variance was 0.945326 comparing performance on the identical essay questions from 2014 and 2013. The average raw score on the essay was 17.35455 in 2014 and 17.4017 in 2013.

The statistically insignificant difference in exam performance between students in my traditional course and my flipped course is less surprising when noted that the differences between undergraduate grade point averages of both classes were also statistically insignificant.[140] By this marker, the two classes had the same ability to perform on the final examination. The admissions indices and Law School Admissions Test scores of the 2013 class, however, were measurably higher than those of the 2014 class,[141] demonstrating that the students in 2013 may have had an advantage in their predicted performance in law school. It is certainly possible that the students' statistical performance advantage in 2013 canceled out any gains in learning outcomes realized by the 2014 class as a result of the flipped course.

A number of other factors may also have affected the empirical value of the data. First, the sample pool may simply have been too small to yield reliable results of statistical significance. After all, the sample from 2013 was comprised of only 56 students and the 2014 set included only 57 students. There may have been too few students studied to draw any reliable conclusion.

Additionally, when comparing two groups of students studying similar material through different methods, it is not unusual to find similar exam performance.

> Numerous literature surveys have found that, when researchers try to evaluate the comparative effectiveness of teaching methods by comparing the average exam performance of students taught by one method to the average exam performance of stu-

139. The result of a T-Test with two tails and unequal variance was 0.9416 comparing performance on the identical multiple-choice questions from 2014 and 2013. The average raw score on the multiple-choice section was 2.781818 in 2014 and 2.767857 in 2013.

140. The result of a T-Test with two tails and unequal variance was 0.80049 comparing students' undergraduate grade point averages ("UGPA") from 2014 and 2013. The average UGPA was 3.22 in 2014 and 3.24 in 2013.

141. The result of a T-Test with two tails and unequal variance was 0.00432 comparing students' admissions indices from 2014 and 2013. The average admissions index was 2.48 in 2014 and 2.64 in 2013. The result of a T-Test with two tails and unequal variance was 0.80049 comparing students' scores on the Law School Admissions Test ("LSAT") from 2014 and 2013. The average LSAT score was 152.9 in 2014 and 154.2 in 2013.

> dents taught by a different method, the different teaching methods commonly appear equally efficacious. To be sure, some individual students learn better when taught by one method rather than another. When comparing the average performance of students within groups, however, those individual differences tend to balance out, such that shifting from one group teaching method to another is unlikely to yield significant net learning gains for the group as a whole.[142]

The answer may simply lie in the fact that empirical studies such as these may not be the most effective method for assessing learning outcomes. Of course, an equally valid alternative conclusion could be that flipped learning, as I employed it, had no effect on the learning outcomes of my Civil Procedure students.

VI. CONCLUSION

The empirical data suggests that flipped learning should lead to increased student learning. My own data suggests that, at the very least, it does not decrease student learning in a law school setting. My personal experience leads me to conclude that flipped learning is an overall positive teaching method preferable to a traditional Socratic classroom. Both my students and I reported an enjoyable learning environment and, at the very least, I provided my class with additional educational materials online, which they appreciated. Although the data neither proved nor disproved my hypothesis, I remain convinced that my students learned substantive material on a deeper level.

I cannot prove that student learning improved in my flipped classroom over that of my traditional class. There are other practical reasons, however, to adopt a flipped learning model. Most pressing is the economic pressure facing modern law schools, which must prepare to compete in an increasingly online-only educational environment.

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142. Pettys, *supra* note 55, at 1277–78.

> The number of university leaders and faculty members who will have to confront that question is poised to skyrocket in the years ahead, as many of the nation's most respected institutions of higher education develop platforms for conveying to the public – for little or no charge – a great deal of the information that students historically have paid tens of thousands of dollars to obtain. There is no reason to believe, by the way, that the information traditionally conveyed in law schools' doctrinal classrooms will remain exempt from that revolution. Like their counterparts in other disciplines, many law professors may covet the opportunity to teach thousands of students around the world through creative uses of Web-based technologies.[143]

Blended learning in the form of a flipped classroom model will enable law schools to educate larger classes, while maintaining the face-to-face instructor support that online courses and MOOCs simply cannot provide.[144] Even if there is no definable learning advantage to implementing flipped learning, the overall advantages of such a platform outweigh those offered by the status quo.

Flipped learning demands greater effort from both educators and students than the more traditional Socratic Method. It also offers both parties a return on their investment of increased effort. I may not be able to objectively prove the success of my flipped course, but I am nonetheless convinced of its benefits. I intend to continue flipping my Civil Procedure and other courses, hopefully improving as an educator and a flipper with each effort.

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143. *Id.* at 1299. Stanford University computer science faculty member Daphne Koller "predicts that the increasing availability of well-taught free or low-cost online courses will push universities 'to change, because they will not be able to charge students for content any longer.'" *Id.* at 1302.

144. *See supra* notes 65–70 and accompanying text.