

# JD-Next: A Randomized Experiment of an Online Scalable Program to Prepare Diverse Students for Law School

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## I. Introduction

Imagine starting a medical degree without having studied science as an undergraduate. Without having exposure to the basic content, how can potential students be confident that they are on the right academic path? Without training in the specific skills needed, how can they succeed on that path?

In the health professions, graduate programs of education have solutions to these problems. Before matriculating as medical students, applicants are typically required to take a relevant curriculum, including courses like organic chemistry and biology, as undergraduates. If they graduate without doing so, and later choose to go to medical school, they can take a “post-baccalaureate” program to fill in the gaps and demonstrate their ability to learn such material.

In contrast, for law, the juris doctorate (JD) has no particular curriculum as a prerequisite and lacks a systematic approach to exposing potential students to the skills and methods of legal education. Matriculants thus arrive to JD programs with widely varying preparations, some having studied chemistry as undergraduates, others having studied economics or literature. Few have learned the skills of case reading and analysis, which will be needed on the first day of law school. Of course, some students will have advantages—for example, if they have attorneys or other highly educated professionals in their families. Some may even spend money and time to take expensive preparation courses. But these advantages can just exacerbate disparities. The American JD also lacks a systematic approach to preparing diverse populations to succeed in the study of law. Moreover, the field lacks systematic and valid measures of prospective students’ ability to learn legal skills from cases, as in law school classes.

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As one of two companion papers, this article explains our efforts to create and evaluate a program called JD-Next, which exposed students to legal education, prepared them to succeed, and assessed their ability to do so. JD-Next is a fully online, noncredit, seven-and-a-half-week course to train potential JD students in case reading and analysis skills before their first year of law school. This article focuses on rigorously testing the exposure and preparation functions of this program in 2019 to determine whether participation in such a course can improve law school confidence and performance of matriculating students. In the companion article, we test whether the exam at the end of the JD-Next course is a valid and reliable predictor of law school performance.

We recruited a national sample of potential JD students, enriched for racial/ethnic diversity so that less than half of the students identified as White non-Hispanic, and randomized them to the course or an active placebo control group (where participants watched legal television shows). We also recruited a sample of volunteers at one university who self-selected into the course and who were matched to non-participants, using university archival data.

We found that participating in the JD-Next course is associated with substantial improvement in grades for the targeted 1L course (Contracts) and overall first semester 1L GPA. We also report substantial student confidence gains and satisfaction with the course, in qualitative and quantitative terms, based on a survey at three points in time (pre-course, post-course, and post-semester). In a companion article, we report on the validity and reliability of the JD-Next exam for use in law school admissions.<sup>1</sup>

As background, we first review the literature around underrepresentation in JD programs and the role of bridge programs to help address the problem. We then lay out our methods in Part II, including both the program design and the research approach. We share our results in Part III, identify strengths and limitations of the study in Part IV, and discuss the implications in Part V. An appendix provides methodological details.

### *A. Underrepresentation in JD Programs*

The legal profession has a problem of diversity and inclusion—it does not reflect the population that it serves.<sup>2</sup> The problem is not just in law schools and downstream in law firms, government offices, and courthouses; it is also upstream.<sup>3</sup> Before applying to law school, before even preparing for admissions

1. Jessica Findley, Adriana Cimetta, Heidi Legg Burross, Katherine C. Cheng, Matt Charles, Cayley Balsler, Ran Li, & Christopher Robertson, *JD-Next: A Valid and Reliable Tool to Predict Diverse Students' Success in Law School*, J. EMPIRICAL LEGAL STUD. 1-32 (2023), doi.org/10.1111/jels.12342.
2. AM. BAR ASS'N, NATIONAL LAWYER POPULATION SURVEY: 10-YEAR TREND IN LAWYER DEMOGRAPHICS (2022), [https://www.americanbar.org/content/dam/aba/administrative/market\\_research/national-lawyer-population-demographics-2012-2022.pdf](https://www.americanbar.org/content/dam/aba/administrative/market_research/national-lawyer-population-demographics-2012-2022.pdf) (showing that American lawyers are 38% female, 5% are Black, 5% are Asian, 0% are Hawaiian/Pacific Islander, and 0% are Native American, while 81% are white Caucasian).
3. See Sarah E. Redfield, *The Educational Pipeline to Law School—Too Broken and Too Narrow to Provide Diversity*, 8. PIERCE L. REV. 347, 347, 350 (2009).

exams, students must become aware that the JD is a real option for themselves, believe that it would be worthwhile and feasible, and then develop an intention to pursue it. This self-selection is less likely to happen among students from underrepresented backgrounds whose parents did not attend college or law school in particular, which disproportionately is true of Black, Hispanic, and Native American populations.<sup>4</sup> Among undergraduates considering a JD, only 20% are first-generation college students, and half have at least one parent with an advanced degree.<sup>5</sup> Students appear to rely heavily on relatives for advice about law school (60%), more often than they rely on professors (50%) or advisors (47%).<sup>6</sup> The advantages of attending law school can then accumulate across generations, following patterns of social privilege.

This process of self-selection into law school produces a pattern of false negatives—students who could someday be excellent legal professionals never seriously consider the pathway or develop confidence that it may be a worthwhile path for them. The lack of pre-JD exposure to legal study may also lead to false positives, as some students choose to go to law school without really knowing whether the legal profession is a good fit for their skills and interests. Such mismatches also waste time and resources, as students potentially accumulate tens of thousands of dollars of student debt only to find that the law is not for them.<sup>7</sup> The failure in law school may also undermine self-confidence for the student’s next endeavor.

In studies of higher education, a consensus is forming that “[w]e can no longer assume that the organizational structures of our current institutions will adequately meet the needs of underrepresented students. Instead, we must find ways to serve them through curricula and programs that place their needs at the center.”<sup>8</sup> Once students matriculate, advising and mentoring are critical to success of underrepresented students in discipline-specific academics.<sup>9</sup> But, for

4. See Khanh Van T. Bui, *First-Generation College Students at a Four-Year University: Background Characteristics, Reasons for Pursuing Higher Education, and First Year Experiences*, 36 COLL. STUDENT J. 3 (2002).
5. ASS’N OF AM. LAW SCHS. & GALLUP, HIGHLIGHTS FROM *BEFORE THE JD: UNDERGRADUATE VIEWS ON LAW SCHOOL* 2 (2018), <https://www.aals.org/wp-content/uploads/2018/09/BJDReportsHghlights.pdf>.
6. *Id.* at 4.
7. See, e.g., Andrew S. Belasco, Michael J. Trivette & Karen L. Webber, *Advanced Degrees of Debt: Analyzing the Patterns and Determinants of Graduate Student Borrowing*, 37 REV. HIGHER EDUC. 469, 489–90 (2014) (citations omitted) (“In the past decade, several studies have highlighted the lack of knowledge that prospective graduate students exhibit regarding the costs and career outcomes of graduate education. Other journalistic reports describe bankrupt dropouts or broke graduates hampered by inutile and/or inappropriate degrees”).
8. Gina A. Garcia & Otgonjargal Okhidoi, *Culturally Relevant Practices that “Serve” Students at a Hispanic Serving Institution*, 40 INNOVATIVE HIGHER EDUC. 345, 355 (2016).
9. See Russell A. McClain, *Bottled at the Source: Recapturing the Essence of Academic Support as a Primary Tool of Education Equity for Minority Law Students*, 18 UNIV. MD. L.J. RACE RELIGION GENDER & CLASS 139, 143 (2018); GUADALUPE LOZANO ET AL., TRANSFORMING STEM EDUCATION IN HISPANIC SERVING INSTITUTIONS IN THE UNITED STATES: A CONSENSUS REPORT 5–6 (2018), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3238702](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3238702).

the reasons just noted, by then it may be too late, since some may not matriculate at all, and others may be unprepared or poorly matched. When JD classes start on day one, some students are already ahead and some are already behind in their ability to read a case, find a rule, and apply it to new facts.

### *B. Bridge Programs for JD Education*

“Bridge” (or “pipeline”) programs consist of courses that do not count toward a degree but prepare and/or qualify the student for a degree program. Our review of websites and directories found thirty-three active prelaw preparatory programs in the United States (some that focus more on successfully applying to law school, and others that focus more on success in law school), and we summarize a selection of thirteen of these programs in Table 1. These programs range widely in cost, scope, intensity, class size, and eligibility. We will highlight several that are in some ways comparable to JD-Next without providing a comprehensive discussion of all known prep programs.<sup>10</sup> The empirical evidence demonstrating the efficacy of prelaw preparatory programs has been limited but promising. In addition to searching key databases, with the help of a law librarian, we reached out to program leaders to find unpublished studies.

Fifteen of the extant bridge programs have a primary focus on the law school application process rather than preparation for law school itself. One example is the Lex Scholars program by Access Lex, which in 2021 offered 250 applicants a Kaplan Online Law School Admission Test (LSAT) course, and fifty applicants admission counseling and financial education.<sup>11</sup> As something of a hybrid, the Trials program offered by Advantage Testing Foundation describes its program as including two forms of LSAT prep, but says that “[s]tudents will also attend lectures on diverse aspects of the legal education and profession. . . .”<sup>12</sup> Educational Testing Services (ETS) and the Law School Admission Council (LSAC) also offer free test prep materials or programs for their exams (the GRE-General and the LSAT).<sup>13</sup>

Of the eighteen remaining programs, four are offered in connection with the LSAC Prelaw Undergraduate Scholars (PLUS) Program, and eight partner

10. See Marisa Manzi & Nina Totenberg, *‘Already Behind’: Diversifying the Legal Profession Starts Before the LSAT*, NAT’L PUB. RADIO (Dec. 22, 2020), <https://www.npr.org/2020/12/22/944434661/already-behind-diversifying-the-legal-profession-starts-before-the-lsat> (describing programs other than JD-Next, including the Legal Education Access Pipeline); *AccessLex Diversity Pipeline Program Directory*, ACCESSLEX INST., <https://www.accesslex.org/accesslex-diversity-pipeline-program-directory> (last updated Jan. 27, 2022).
11. See *LexScholars*, ACCESSLEX INST., <https://web.archive.org/web/20210119150545/https://www.accesslex.org/tools-and-resources/lexscholars-accesslex> (last visited Jan. 19, 2021).
12. *Frequently Asked Questions*, ADVANTAGE TESTING FOUND. TRIALS (2022), <https://trials.atfoundation.org/faq> (last visited Jan. 9, 2021).
13. *The GRE General Test*, EDUC. TESTING SERV. GRADUATE REC. EXAMINATION (2022), <https://www.ets.org/gre/test-takers/general-test/prepare.html> (last visited Jan. 9, 2021); *Prepare for the LSAT*, L. SCH. ADMISSION COUNCIL (2022), <https://www.lsac.org/lSAT/prepare>.

schools offered PLUS programs in 2021.<sup>14</sup> These programs, targeting undergraduate sophomores and juniors, have three stated goals: (1) to strengthen academic skills necessary for law school; (2) to prepare students for and guide them through the law school admissions process; and (3) to help students explore law-related career options while providing them with networking opportunities to do so. LSAC offered schools PLUS grants for “creative approaches to introducing students to the academic environment of law school and legal career opportunities.”<sup>15</sup> The 2020 online version of the course, PLUS Online, included “a sample first-year legal course, a legal writing course, and sessions about career opportunities in the legal profession.”<sup>16</sup>

There are several other free programs. The Pre-Law Summer Institute (PLSI) for American Indians and Alaska Natives is an intensive, in-person prelaw preparatory program offered exclusively to American Indians and Alaska Natives, and it re-creates the first semester of law school for the students the summer before law school.<sup>17</sup> The program lasts two months, is offered to qualifying students free of charge and “provides a modest living allowance when funds permit.”<sup>18</sup> The program consists of three substantive law courses and an “advocacy/legal writing course.”<sup>19</sup> The program is meant to simulate the full-time commitment of law school, with students required to attend classes Monday through Friday, study three hours for every hour spent in class, and eschew any commitments to work or school outside of the course.<sup>20</sup> A 1986 study of the program reportedly looked at seven variables that “historically had appeared to affect success.”<sup>21</sup> The study found “a success rate for those students who attended the institute of about 70%, while the rate for those who did not was about 50%.”<sup>22</sup> The greatest benefits were seen for students with lower LSAT scores. The authors conclude that they “found strong evidence to support the proposition that the

14. *LSAC Prelaw Undergraduate Scholars (PLUS) Programs*, L. SCH. ADMISSION COUNCIL (2022), <https://www.lsac.org/discover-law/diversity-law-school/prelaw-undergraduate-scholars-plus-programs>.
15. *Curriculum Summary for PLUS Programs*, L. SCH. ADMISSION COUNCIL (2022) <https://www.lsac.org/members/lscac-grant-programs/prelaw-undergraduate-scholars-plus-program-grants/curriculum-summary> (last visited Jan. 9, 2021).
16. *Prelaw Undergraduate Scholars*, *supra* note 14.
17. *What is PLSI: Pre-Law Summer Institute for American Indians and Alaska Natives*, AM. INDIAN L. CTR., INC., <https://www.ailec-inc.org/plsi> (last visited Jan. 9, 2021); Heidi Estes & Robert Laurence, *Preparing American Indians for Law School: The American Indian Law Center's Pre-Law Summer Institute*, 12 N. ILL. U. L. REV. 278, 281 (1992).
18. *What is PLSI*, *supra* note 17.
19. *Curriculum: Pre-Law Summer Institute for American Indians and Alaska Natives*, AM. INDIAN L. CTR., INC., <https://www.ailec-inc.org/plsi/curriculum/> (last visited Jan. 9, 2021).
20. *Id.*
21. Estes & Laurence, *supra* note 17, at 285.
22. *Id.* at 286.

Pre-Law Summer Institute greatly enhances students' probability of successfully completing law school."<sup>23</sup>

The Eversheds Sutherland Scholar Program (ESSP) has (as of 2021) accepted 425 students since the program began in 2005, cohorts of roughly thirty students each year.<sup>24</sup> ESSP is a residential program in which students are asked to spend two to three hours per night, roughly ten to fifteen hours per week, over the course of three weeks focused on law.<sup>25</sup>

Before the pandemic, the Indiana University Robert H. McKinney School of Law's Summer Law and Leadership Academy (SLLA) was a residential program lasting six days.<sup>26</sup> The course consists of multiple lectures on both the admissions process and what to expect at law school, with the centerpiece of the course being daily preparation for a mock trial on the final day.<sup>27</sup>

The remaining nine courses that we found charge tuition. The shortest course, Barbri Law Preview, takes six days and costs \$1395 for "on-demand" instruction.<sup>28</sup> The next-shortest course, the Duke-D.C. Summer Institute on Law and Policy, takes place over a couple of two weeks periods, costing each student \$600 to \$1800, depending on the number of courses the student chooses to attend.<sup>29</sup>

A more recent entrant to the field is the Harvard Zero-L program, which introduces students to some foundational legal knowledge and typically involves "12 to 14 hours of interactive, online learning."<sup>30</sup> The modules in Zero-L emphasize introductory legal knowledge, e.g., an overview of tort law and kinds of common-law arguments. Unlike most preparatory programs, Zero-L was built as a fully online program. Zero-L was temporarily offered free of charge to matriculating law students from participating schools during the 2020 pandemic.<sup>31</sup> It has since "return[ed] to [a] pre-pandemic plan to offer Zero-L

23. *Id.*

24. *Eversheds Sutherland Scholars*, EVERSHEDS SUTHERLAND, <https://www.esscholars.com/Home> (last visited Jan. 9, 2021).

25. EVERSHEDS SUTHERLAND, *ESSCHOLARS FAQs*, <https://www.esscholars.com/portalresource/ESScholarsFAQ.pdf> (last visited Jan. 9, 2021).

26. SUMMER L. & LEADERSHIP ACAD., ROBERT H. MCKINNEY SCH. OF L, IND. UNIV. (2020), [https://mckinneylaw.iu.edu/admissions/jd/diversity/Summer\\_Law\\_Leadership\\_Academy\\_2020.pdf](https://mckinneylaw.iu.edu/admissions/jd/diversity/Summer_Law_Leadership_Academy_2020.pdf).

27. *Id.*

28. *Course Overview*, BARBRI L. PREVIEW (2022), <https://lawpreview.barbri.com/law-school-prep-course/>.

29. *Two-Week Courses*, DUKE L. (2022), <https://law.duke.edu/dcinstitute/courses/>.

30. John S. Rosenberg, *Harvard Law Offers Pre-Matriculation Material Free Nationwide*, HARV. MAG. (May 20, 2020), <https://harvardmagazine.com/2020/05/harvard-law-offers-zero-l-free-nationwide>.

31. *Harvard Makes Online Course for Incoming Students Available to All Law Schools for Free this Summer*, HARV. L. TODAY (May 20, 2020), <https://today.law.harvard.edu/harvard-makes-online-course-for-incoming-students-available-to-all-law-schools-for-free-this-summer/>.

as an educational tool that schools can purchase for a reasonable fee to share with their students.”<sup>32</sup>

Perhaps most widely known, The Council on Legal Education Opportunity Inc. (CLEOinc.) has operated the Pre-Law Summer Institute (PLSI) continuously since 1968.<sup>33</sup> In its current iteration, the PLSI program aims to teach the foundational skills necessary for success at law school, including reading and briefing court opinions and preparing for law school exams.<sup>34</sup> PLSI lasts six weeks, costs \$1,500 to \$2,500 per student depending on attendance format (less any awarded scholarships), and enrolls up to 60 students each summer.<sup>35</sup> The PLSI was offered in person for its first fifty years but went online for the first time in 2020 because of COVID-19.

In terms of outcomes, CLEO reports that an average of 70% of students admitted to its program have already been admitted or conditionally admitted to law school and that “many students with marginal LSAT scores and GPAs would not be admitted to law school without the assistance of CLEO.”<sup>36</sup> Research on the program from the 1970s and 1980s was promising but not rigorous.<sup>37</sup> More recently, Michael Hunter Schwartz describes three assessments of CLEO’s PLSI program.<sup>38</sup> In a 2006 assessment, participants at two schools were surveyed and

32. *Zero-L*, HARV. L. SCH., [HTTPS://ONLINE.LAW.HARVARD.EDU/](https://online.law.harvard.edu/) (last visited Dec. 19, 2022).
33. *Penn State Dickinson Law Chosen to Host 52nd Annual CLEO Pre-Law Summer Institute*, COUNCIL ON LEGAL EDUC. OPPORTUNITY INC. (Oct. 10, 2019), [www.cleoinc.org/pennstate-dickinson-law-chosen-to-host-52nd-annual-cleo-pre-law-summer-institute-plsi](http://www.cleoinc.org/pennstate-dickinson-law-chosen-to-host-52nd-annual-cleo-pre-law-summer-institute-plsi).
34. *CLEO’s Pre-Law Summer Institute*, COUNCIL ON LEGAL EDUC. OPPORTUNITY INC., [www.cleoinc.org/plsi/](http://www.cleoinc.org/plsi/) (last visited Jan. 9, 2021).
35. *Id.*; *2019 CLEO Edge Pre-Law Scholarship Recipients Announced*, COUNCIL ON LEGAL EDUC. OPPORTUNITY INC. (May 14, 2019), <https://cleoinc.org/cleo-edge-pre-law-scholarship-recipients-announced/> (listing twenty-five \$1000 scholarships in 2019).
36. *CLEO’s Pre-Law.*, *supra* note 34. See also Dana N. Thompson Dorsey, *Accessing the Legal Playing Field: Examining the Race-Conscious Affirmative Action Legal Debate through the Eyes of the Council of Legal Education Opportunity (CLEO) Program*, 16 TEX. WESLEYAN L. REV. 645, 678 (2010) (reviewing CLEO’s own annual reports, which “boast a success rate of over 95% of its SI fellows graduating from law school, passing a bar examination, and practicing law in some capacity”).
37. Eulius Simien, *The Law School Admission Test as a Barrier to Almost Twenty Years of Affirmative Action*, 12 T. MARSHALL L. REV. 359, 383–84 (1987) (explaining that CLEO has improved the graduation rate of its students, who, between 1968 and 1979, had an average LSAT score of 422 compared with the national mean LSAT score of 551.9 in October of 1980. Despite these low LSAT scores, “a high percentage of the CLEO students graduated from law school”); Nancy Fulop, *The 1969 Cleo Summer Institute Reports: A Summary*, 2 U. TOL. L. REV. 633, 673–675 (1970) (partnering law schools reported that CLEO students progressed “at about the same rate as regular first year law students” but that “staff reactions alone are not convincing and that only student success in law school can justify the continuance of the CLEO program”); see also Ralph R. Smith, *The Cleo Experience: A Success by Any Measure*, 22 HOWARD L.J. 399, 400 (1979) (reporting that of 105 students enrolled in the summer institutes, ninety completed the program and were admitted to law school; of those, 80% continued in good academic standing).
38. Michael Hunter Schwartz, *50 More Years of CLEO Scholars: The Past, the Present, and a Vision for the Future*, 48 VAL. U. L. REV. 621, 629 (2014).

interviewed, and they reported positive experiences and an increased sense of self-efficacy for law school but no significant gains in critical thinking skills.<sup>39</sup> In a survey to students of the 2011 and 2012 CLEO programs, students were asked twenty Likert-scale questions on whether they believed that they had developed relevant skills, e.g., issue spotting or outlining rules into elements, along with a pre- and post-test that “assessed students’ self-regulated learning skills and knowledge of law-related civics, such as court hierarchies and binding and persuasive authority.”<sup>40</sup> Students averaged 58% correct on the pre-test, 74% on the post-test, although the statistical significance of the difference was not reported.<sup>41</sup>

Including CLEO’s PLSI, we found six tuition-based courses putatively similar to JD-Next in their time commitment, course goals, and scope.<sup>42</sup> Each course lasts four to seven weeks, intends to prepare students for law school, and focuses on introductory skills and knowledge required at law school. The least expensive course, the Scholar I class offered by the University of Houston Law Center as part of its Pre-Law Pipeline Program, costs \$600.<sup>43</sup> The most expensive of the courses, the Prelaw Summer Program in New York City offered by Cornell University, costs the student \$6,980.<sup>44</sup> Two of these programs, those of the University of Texas at San Antonio and the University of Houston, have larger prelaw programs of which their comparable courses are a part.<sup>45</sup>

There is some extant research on these sorts of programs, though most outcomes are self-reported. A 1989 study of New Jersey’s Summer Institute for Pre-Legal Studies found that, in a cross section of thirty former students, “twenty-eight of the thirty students reported increases in grade point averages, which they directly attributed to their participation in the Institute.”<sup>46</sup> Another

39. *Id.*

40. *Id.*

41. *Id.*

42. Those programs are (1) *Charles Hamilton Houston Pre-Law Institute* (2023), <https://www.facebook.com/chhprelawinstitute/>; (2) *Cornell Prelaw Program & Internship in New York City*, [HTTPS://SCE.CORNELL.EDU/COURSES/ROSTER/PRELA](https://sce.cornell.edu/courses/roster/prelaw)W (last visited Jan. 31, 2023); (3) *Pre-Law Pipeline Program, Scholar I Online*, UNIV. OF HOUSTON LAW CENTER, (2022), <https://sce.cornell.edu/courses/roster/prelaw>; (4) *Pre-Law Institute*, FORDHAM UNIV., <https://sce.cornell.edu/courses/roster/prelaw> (last visited Jan. 31, 2023); (5) *Institute for Law and Public Affairs, Summer Law School Preparation Academy*, UNIV. OF TEXAS AT SAN ANTONIO (2022); and (6) CLEO’s PLSI.

43. *Information for Pre-Law Pipeline: Scholar I*, U. HOUSTON L. CTR., <https://www.law.uh.edu/pipeline/ScholarI.asp> (last visited Jan. 9, 2021).

44. *Cornell Prelaw Program & Internship in New York City*, CORNELL SCH. CONTINUING EDUC., <https://sce.cornell.edu/courses/roster/prelaw> (last visited Jan. 9, 2021).

45. 2021 SUMMER LAW SCHOOL PREPARATION ACADEMY (SLSPA) CURRICULUM (12 CREDIT HOURS), INST. FOR L. & PUB. AFFAIRS, UNIV. OF TEX. AT SAN ANTONIO (2021), <https://www.utsa.edu/ilpa/documents/2021-SLSPA-Curriculum-1.pdf>; *Information for Pre-Law Pipeline: Program Dates*, U. HOUSTON L. CTR., <https://www.law.uh.edu/pipeline/programs.asp> (last visited Jan. 9, 2021).

46. Brenda Saunders Hampden, *Preparing Undergraduate Minority Students for the Law School Experience*,



program taking place during the summers of 1989 and 1990, the Summer Fellowship Program to Encourage Undergraduate Students to Enter Law, administered a post-program self-evaluation designed to determine changes in attitudes about law school and law practice and in self-esteem and self-confidence.<sup>47</sup> On the self-reported survey, “all participants reported greatly increased knowledge about law and overwhelming changes in self-confidence.”<sup>48</sup>

Our literature search did not reveal any evaluations of several of the foregoing programs, and the extant evaluations for others were largely based on cross-sectional surveys with self-reported benefits, without randomization, control groups, or performance-based outcomes (such as law school grades). Because of the lack of rigorous empirical evidence concerning prelaw preparatory program efficacy, we turn to the literature on post-baccalaureate premedical (PBPM) programs, of which there are over 309 active nationwide.<sup>49</sup> The programs vary in their duration and approach, but all serve to accredit aspiring medical students with the prerequisite courses for medical school. Medical schools typically require that applicants have already completed multiple courses in biology, physics, general chemistry, organic chemistry, biochemistry, and calculus.

A study at one university found that students who completed PBPM work before enrolling in medical school demonstrated competency consistent with that of their peers, even though on average they had lower MCAT scores and college GPAs.<sup>50</sup> Another study assessing five University of California medical school PBPM programs found students who participated were more likely to matriculate into medical school than those who did not when GPA, MCAT, and demographic characteristics were controlled.<sup>51</sup>

Some programs aim to increase enrollment of disadvantaged students in particular. In one studied program, nearly all of the participants (94%) successfully completed the PBPM and matriculated at the affiliated medical school between 1991 and 2008.<sup>52</sup> Of those students, only 7% withdrew or were dismissed for poor performance.<sup>53</sup> McDougle and colleagues sought to evaluate the long-

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12 SETON HALL LEGIS. J. 207, 228 (1989).

47. Mary Kay Lundwall, *Increasing Diversity in Law Schools and the Legal Profession: A New Approach*, 14 CHICANO-LATINO L. REV. 147, 158 (1994).

48. *Id.*

49. *Postbaccalaureate Premedical Programs*, ASS'N OF AM. MED. COLLS., <https://mec.aamc.org/postbac/#/> index (last visited Jan. 3, 2021).

50. Bruno Giordani et al., *Effectiveness of a Formal Post-Baccalaureate Pre-Medicine Program for Underrepresented Minority Students*, 76 ACAD. MED. 844, 847 (2001).

51. Kevin Grumbach & Eric Chen, *Effectiveness of University of California Postbaccalaureate Premedical Programs in Increasing Medical School Matriculation for Minority and Disadvantaged Students*, 296 JAMA 1079, 1083-1082 (2006).

52. Wanda Limpscomb et al., *The Effectiveness of a Postbaccalaureate Program for Students from Disadvantaged Backgrounds*, 84 ACAD. MED. S42, S43 (2009).

53. *Id.*

term outcomes of ten PBPM programs designed for college graduates from disadvantaged and underrepresented backgrounds.<sup>54</sup> Using a survey of program graduates and comparing them to a control group of nonprogram-graduates, they found that participants are more likely to work in settings that provide access for vulnerable and underserved populations after graduating than those who did not participate in PBPM programs.<sup>55</sup>

In sum: Our review found no other courses that aspire to *both* prepare students for law school and also evaluate their ability to succeed in law school, the combination that is the key innovation of JD-Next.<sup>56</sup> We also found that, unlike JD-Next, which was designed online to be accessible, scalable, and low-cost (or free) to students, several of these programs are small, expensive, and location-constrained. Finally, we have found little in the way of rigorous systematic evaluation of the efficacy of these programs, and no other randomized controlled trial of such a program in particular.

**Table 1A:** *Selected Free Law School Bridge/Preparatory Programs*

Program Name	Duration	Description
Eversheds Sutherland Scholar Program	3 weeks	Emphasizes how to navigate admissions, what to expect during 1L year, and finding work after graduation. Students also take introductory courses in contracts and torts, along with exams. (Discontinued indefinitely as of 2020.)
Lexscholars by AccessLex	32–34 hours	Online Kaplan LSAT course, plus ongoing admission counseling.
LSAC's Prelaw Undergraduate Scholars (PLUS)	4 weeks	Offered online through 8 universities, with variations, but includes curriculum on career options, law school skills, and the admissions process, along with networking and mentoring relationships.
Pre-Law Summer Institute for American Indians and Alaska Natives	2 months	Re-creates the first semester of law school. Built in person, but shifted online for the pandemic.

54. Leon McDougale et al., *A National Long-term Outcomes Evaluation of U.S. Premedical Postbaccalaureate Programs Designed to Promote Healthcare Access and Workforce Diversity*, 26 J. HEALTH CARE FOR POOR & UNDERSERVED 631, 638 (2015).

55. *Id.* at 638.

56. On the question of predicting performance, see our companion article, Findley et al., *supra* note 1.

**Table 1B:** *Selected Fee-Based Law School Bridge/Preparatory Programs*

Program Name	Duration   Cost	Description
Barbri Law Preview	6 days   \$1395	Overview of 1L law classes, including 1L doctrinal courses, case briefing, outlining, exam-taking strategies, legal writing, and legal research. The content is delivered via recorded lectures and reading assignments.
CLEO PLSI (Council on Legal Educ. Opportunity Pre-Law Summer Institute)	6 weeks   \$1500	Historically for minority and low-income students. Fully Online since 2020. Two weeks of metacognition and mindset. Four weeks on law school skills, including how to read and brief opinions, how to prepare for and write exams using IRAC. Second four weeks include a simulated law class and a debrief of a written contracts exam.
Cornell Pre-Law Summer Program in New York City	6 weeks   \$6980	Three weeks at an internship, and three weeks in the American Legal System course, taught live and in person via traditional Socratic method. Students will learn fundamental concepts and techniques, experience the legal field firsthand, explore various professional roles, prepare for law school, and develop professional contacts. <a href="https://mooc.global/cornell/cornell-prelaw-program-goes-online-this-summer/">https://mooc.global/cornell/cornell-prelaw-program-goes-online-this-summer/</a>
Fordham Pre-Law Institute	6 weeks   Noncredit: \$950; 3-credit: \$2919	Foundational topics including criminal law and procedure, civil procedure, and legal writing. Live morning classes are taught by faculty via Socratic method.

Harvard Zero-L	12-14 hours   price not disclosed	Short lecture videos with self-check comprehension quizzes. The videos introduce students to case briefing, the U.S. court system, 1L courses, statutory interpretation, the legal profession, and legal theory.
U. Houston Pre-Law Pipeline Program–Scholar I	5 weeks   \$600	For first-generation/low-income college freshmen and sophomores, a five-week academic curriculum, an online/in-person internship program, and participation in introductory 1L law school classes.
UT San Antonio Summer Law School Preparation Academy	2 terms lasting 5 weeks each   ~\$2000 - ~\$9000+	Four 3-credit courses on constitutional analysis, logic, writing, and tort law. Students also participate in two Law School Preparation Experience courses. Also includes preparation for application, admissions, and the LSAT; content on financial considerations and legal careers; and networking opportunities with legal professionals.

*Note:* Tuition-based programs have various fee waivers, subsidies, and institutional agreements, which may lower the price paid by particular students to zero.

## II. Methods

In this part we discuss our approach to developing and testing the precursor to JD-Next.<sup>57</sup> This includes our materials (the intervention course and the placebo course), as well as our recruitment efforts to secure and retain the research populations.

### *A. The JD-Next Course*

We used a scaffolded fully online pedagogy, consisting of fifteen doctrinal classes covering eighteen contracts law cases and eight skills workshops across seven and a half weeks. Each week consisted of two classes and one skills workshop. The doctrinal law classes drew on the kinds of cases that a law student could expect to encounter in a 1L contracts law course, and skills workshops each introduced a skill, e.g., how to identify the rule in a case, with a short three- to eight-minute video explaining the skill and an example of the skill

57. This program was initially pilot-tested in 2019 under the name JD Exposure, Assessment, Preparation (JD-EAP). This manuscript reports that process and results. In 2020, we launched a follow-on study with seventeen law schools called JD-Next. That study involves a modified course, modified exam, and modified analytical methods. That project is currently underway and will be reported separately.

being exercised. The course was designed around the idea that, while students needed some doctrinal material to work with, the development of skills was the key goal.<sup>58</sup> The course was asynchronous, so students could complete assignments at times that worked best for their schedules. Nonetheless, we offered a recommended pace of completion to help students stay on track.

In designing the pilot for the JD-Next, we began with an undergraduate law course, the American Common Law System I (ACLS) developed by University of Arizona Regents Professor Rob Williams using a scaffolded fully online pedagogy, produced in a dedicated video studio. The course originally served as one of the four introductory law courses for the University of Arizona B.A. in Law program, the first undergraduate law degree program in the United States, focusing on case law, doctrine, and lawyering skills (in contrast to law and society or legal studies approaches).<sup>59</sup> Starting with the three-credit ACLS course covering both contracts and torts, we cut it in about half, to focus on an introduction to contracts law.

The doctrinal law classes drew on the kinds of material a law student could expect to encounter in a 1L contracts law course (e.g., classic cases like *Hamer v. Sidway*). However, the purpose was not to teach students the law of contracts, which they would inevitably have a chance to learn once they matriculated as JD students. For this reason, there was no attempt to survey the entire field typically covered by a first-year JD class. Rather, the JD-Next contracts materials were merely a specimen of a typical law school case, asking typical law school questions, discussing typical law doctrine. While the skills workshops taught the skills developed and employed at law school, the doctrinal classes provided students with an arena in which to practice them.

The doctrinal classes followed a consistent structure with an emphasis on formative assessment<sup>60</sup> and instructor presence.<sup>61</sup> Although fully online and primarily asynchronous, the course was designed as an analog to an ideal version of a traditional law school classroom built from the Langdell case method, the

58. See generally Leah M. Christensen, *The Power of Skills: An Empirical Study of Lawyering Skills Grades as the Strongest Predictor of Law School Success*, 83 ST. JOHN'S L. REV. 795, 799, 806 (2009); Leah M. Christensen, *Legal Reading and Success in Law School: An Empirical Study*, 30 SEATTLE U. L. REV. 603, 604 (2007).

59. See generally *Bachelor of Arts in Law (BA in Law)*, JAMES E. ROGERS C.L., U. ARIZ., <https://law.arizona.edu/bachelor-arts-law> (last visited Jan. 9, 2021).

60. Daniel Schwarcz & Dion Farganis, *The Impact of Individualized Feedback on Law Student Performance*, 67(1) J. LEGAL EDUC. 139, 143 (2017) (“[T]hese results do not simply suggest that individualized feedback improves students’ performance in the class where such feedback is given. Instead, they suggest that individualized feedback in a single first-year doctrinal class can improve the quality of students’ exams in all other traditional law school classes during the first year of law school claiming results of the study suggest individualized feedback in a single first-year doctrinal class can improve the quality of students’ exams in that class and in all other first-year doctrinal classes”); Irina Yadira Cevallos Menéndez et al., *The Importance of Formative Assessment in the Learning Teaching Process*, 3(2) INT’L J. SOC. SCI. HUMAN. 238 (2019).

61. Similarly, see Daryl Lawton et al., *Online Learning Based on Essential Concepts and Formative Assessment*, 101 J. ENG’G EDUC. 244, 244 (2012).

Socratic method, and traditional lecture. Each class began with the student's reading of a judicial opinion, as if preparing for the day's cold calls. Rather than receiving (or observing another student receive) a Socratic cold call as in a real 1L class, the student completed a simple reading assessment (a quiz) followed by immediate automated feedback.<sup>62</sup> These quizzes focused on comprehension questions, communicating an expectation of basic readiness, not unlike Socratic questions in a law school class, except that all students were asked the same questions in parallel. Students next viewed a short video lecture explaining further the answers to the reading assessment, with a back-and-forth of modeling, practice, and feedback between instructor and student.

Next, students viewed a doctrinal lecture. These videos were kept short, often lasting twelve minutes, and in any case no more than fifteen minutes, following evidence-based pedagogical practice.<sup>63</sup> After taking in Professor Williams' explanation of the law, the students are introduced to a legal hypothetical as they would encounter in class, in their studies, and on their final exams. These are followed again by an explanation of the problem via video lecture.<sup>64</sup>

To support the students through these doctrinal classes, the skills workshops focused primarily on case briefing, with the five components represented by the acronym FIRAC as follows: (1) identify and distinguish both relevant and narrative facts within a case; (2) identify and formulate the legal issue in the case; (3) identify and synthesize the rule of law applied by the court in the case; (4) identify the legal analysis of both parties and the court; and (5) articulate the legal conclusion and holding of the case.<sup>65</sup> Students were required to submit their case briefs in a narrative form. Each skill workshop introduced a skill, e.g., how to identify the rule in a case, with a short three- to eight-minute video explaining the skill and an example of the skill being exercised. The students were then asked to read a one- to two-page article further explaining the skill. Practice in applying the skill was then achieved via written assignments asking

62. This approach prepares students for a Socratic and vicarious learning model they might encounter in traditional law school teaching but replaces vicarious learning with active learning. Michael Hunter Schwartz, *Teaching Law by Design: How Learning Theory and Instructional Design Can Inform and Reform Law Teaching*, 38 SAN DIEGO L. REV. 347, 357 (2001) (describing typical law school teaching as vicarious and self-teaching, thereby ineffective).
63. Philip J. Guo et al., *How Video Production Affects Student Engagement: An Empirical Study of MOOC Videos*, 2014 PROC. FIRST ACM CONF. ON LEARNING @ SCALE 41, 44 (finding that engagement drops off substantially after twelve minutes of online video).
64. Carol Springer Sargent & Andrea A. Curcio, *Empirical Evidence That Formative Assessments Improve Final Exams*, 61 J. LEGAL EDUC. 379, 381-82 (2012) (citing multiple authors showing that feedback "allows learners to calibrate their progress towards academic goals" and "[t]he effect is greater when the feedback offers an explanation rather than just a correct response," and when the feedback is "available immediately after performing"); see also Ruth Colker et al., *Formative Assessments: A Law School Case Study*, 94 U. DET. MERCY L. REV. 387, 408 (2017) (finding that taking a practice exam was associated with earning a higher grade on the exam).
65. See generally Laura P. Graham, *WhyRac? Revisiting the Traditional Paradigm for Writing about Legal Analysis*, 63 U. KAN. L. REV. 681 (2014) (explaining and critiquing the IRAC paradigm).

students to, e.g., describe the price issue or issues before the court and explain why they are important to the case.

The course used Desire2Learn (D2L) as the learning management system. On the D2L platform, students could access course content such as announcements, the syllabus, readings, videos, and assignments, as well as submit assignments and take the final exam. The course was asynchronous, and students could complete assignments at times that worked best for their schedules; however, we offered a recommended pace of completion to help students stay on track. We used other pedagogical practices to encourage engagement, including a visible instructor presence.<sup>66</sup> The instructor posted regular video announcements, held synchronous office hours, created video walk-throughs of model answers for assignments, and provided written feedback on exemplar essay quizzes. However, to ensure scalability of the program, students did not routinely receive customized individual feedback on their own work.

### *B. Research Design and Placebo*

To evaluate the effects of this course, we designed a three-group, partially randomized block experiment.<sup>67</sup> A national sample was recruited into a blinded study and then randomized to a treatment and an active control (placebo group). In addition, a sample from one university (University of Arizona, “UArizona”) was recruited without blinding, and its members self-selected into either the treatment or a second type of control group, consisting of no further contact. We received de-identified demographics and outcomes data (first-semester grades) from this UArizona no-contact group.

Other members of the national research population were randomized into an active placebo course (with blinding) in order for us to isolate whether the actual JD-Next course content was effectual versus the mere engagement and attention that students would experience in the control group, which may separately raise their expectations and confidence for law school.<sup>68</sup> Students in the placebo group participated in a seven-and-a-half-week course, writing weekly essays about law-related TV shows they watched. The placebo assignments consisted of students’ selecting a law-related TV show of their choice and then

66. Jennifer C. Richardson & Patrick Lowenthal, *Instructor Social Presence: A Neglected Component of the Community of Inquiry*, 2017 INT’L SCI. CONF. ELEARNING AND SOFTWARE FOR EDUC. 532 (last visited Jan 13, 2021) (synthesizing the findings of multiple authors as showing “social presence has also been linked to retention and intention to enroll in online course rates”).

67. This research protocol was determined to be exempt by the Institutional Review Board at the University of Arizona, and all participants provided informed consent. We registered this project on the Open Science Framework (<https://osf.io/dfr4z>) after collecting demographic and attitudinal measures on our participants but before the outcome data had been collected. Still, all analyses herein are exploratory, given reduced sample sizes after attrition. We now have a replication study in the field, to be reported subsequently.

68. See generally BLINDING AS A SOLUTION TO BIAS: STRENGTHENING BIOMEDICAL SCIENCE, FORENSIC SCIENCE, AND LAW (Christopher T. Robertson & Aaron S. Kesselheim eds., 2016); Kenneth F. Schulz & David A. Grimes, *Blinding in Randomised Trials: Hiding Who Got What*, 359 THE LANCET 696 (2002).

writing several paragraphs discussing the plot of the episode, the legal issues presented, the legal arguments made, the attorneys' professionalism, and the resolution of the case. Placebo students received minimal acknowledgment and feedback on their submitted memos, to maintain engagement with the course.

Both the UArizona and national treatment groups, along with those in the national control group, took the same JD-Next final exam, which is described and tested for validity and reliability in the companion article.<sup>69</sup> For the present efficacy analysis, the exam score is also one of the primary outcome variables, with a total possible score of fifty-nine points, including forty-four for the multiple-choice questions and fifteen for the essay question, scored on a standardized rubric.

Our primary hypotheses are that participation in the course will improve JD-Next exam scores, and more importantly, first-semester law school performance, in both contracts courses and also overall GPA. In addition, we will explore respondent confidence in particular skills needed for law school and their qualitative responses to the course. We also seek to explore whether course efficacy will be biased against underrepresented minorities, or whether it instead may be useful as a tool to reduce disparities, if appropriately targeted.

### *C. Participants*

For the national cohort, after confirming compliance with the platform's terms of use, we drew names from the Law School Admissions Council prospective student database and sent e-mail invitations to sign up for the course. Our inclusion criterion was being admitted to a law school in the coming fall semester or, for underrepresented students, to be at least wait-listed at a law school. To understand whether JD-Next had efficacy and predictive power for underrepresented minorities in particular, we oversampled underrepresented groups when sending invitations, and we stratified by race/ethnicity when randomly assigning to the national control and experimental groups.

There was no charge for students to participate. Instead, they were offered incentives for performance, retention, and submission of data, as described in the appendix.

Course grades and law school GPA were obtained from student transcripts when available (41.6% of students in the pooled sample provided their 1L transcripts). If no transcript was submitted, course grades and law school GPA reported by students on the follow-up survey were used. However, three schools were not on the traditional 4.0 grading system; for these students, the self-reported course grades and law school GPA were used. As such, for 40.7% of the pooled sample, transcript data was used; for an additional 6.9% of participants, self-reported grades were used, providing a total of 47.6% valid grades data included in our efficacy analyses. We describe our missing data treatment in the appendix.

69. See Jessica Findley et al., *supra* note 1.



Among those who enrolled and started the course, our final national sample for analysis was 263. Of this national sample (with 133 in the treatment group and 130 in the control), the research population was substantially more diverse than the typical law school class: 16.7% were Asian, 19.0% were Black or African American, 11.6% were Hispanic/Latinx, 32.2% were white, 1.1% were Native American, and 19.4% were of some other race.<sup>70</sup> The other races include Native Hawaiian or other Pacific Islander, Puerto Rican, and multiracial. Participant self-identified gender indicated 32.4% male and 67.7% female.<sup>71</sup>

We also recruited a sample from the University of Arizona (UArizona). We invited all 156 students matriculating at the University of Arizona to participate. Forty-nine students provided some survey data, 45 students began the course, and 25 completed the course, and for the nonparticipants we also received de-identified demographics and grades information from the law school registrar. In terms of race/ethnicity background, approximately 7.1% of UArizona participants identified as Asian, 4.1% Hispanic 1.0% Native American, 0.0% Black or African American, 81.6% white, and 6.1% of some other race. This self-selected group of participants tended to overrepresent those identifying as non-Hispanic white.<sup>72</sup> Participant self-identified gender indicated 62.9% male and 37.1% female.<sup>73</sup> We then used propensity matching by race/ethnicity to create a matched control group yielding a sample of 99 from UArizona (49 treated and 49 control).<sup>74</sup>

With the inclusion of UArizona treated participants and matched control students, along with those recruited nationally, our final total pooled sample was  $N = 361$  that were valid for advanced analysis, as shown in Table 2. As primary covariates, we collected (either directly from participants in the national groups, or from the UArizona registrar) each student's undergraduate GPA and scores for both LSAT and GRE. For students who submitted GRE scores, we converted them to corresponding LSAT scores using the tool provided by ETS, creating a composite variable that we label "LSAT" for simplicity.<sup>75</sup> Recognizing that

70. AM. BAR ASS'N (ABA), SECTION OF LEGAL EDUC. STAT., 2019 1L ENROLLMENT BY GENDER & RACE/ETHNICITY (AGGREGATE), [https://www.americanbar.org/content/dam/aba/administrative/legal\\_education\\_and\\_admissions\\_to\\_the\\_bar/statistics/2019-fall-fyclas-enrollment-gender-race-aggregate.xlsx](https://www.americanbar.org/content/dam/aba/administrative/legal_education_and_admissions_to_the_bar/statistics/2019-fall-fyclas-enrollment-gender-race-aggregate.xlsx) (showing 38,283 total matriculants nationwide, including 23,761 whites (62.1%); 2399 Asians (6%); 4852 Hispanics (12.6%); 2897 Black or African Americans (7.6%), and 177 American Indians (0.46%).)
71. *Id.*, showing that nationwide, out of 38,283 matriculating 1Ls, there were 20,690 women (54%).
72. *Id.* (Arizona 1L class of 133 matriculants consisted of 3.0% Asian, 10.5% Hispanic, 6.7% American Indian, 1.5% Black or African American, and 67.7% white).
73. In comparison, *see id.*, showing that in the University of Arizona 1L class of 133 matriculants, fifty-six (or 42%) were women.
74. We used IBM SPSS 25 to create propensity scores based on logistic regression and score-matching using the FUZZY extension command. *See* Felix Thoemmes, *Propensity Score Matching in SPSS*, ARXIV (Jan. 30, 2012), <https://arxiv.org/abs/1201.6385>; Elizabeth Stuart & Donald B. Rubin, *Matching Methods for Causal Inference: Designing Observational Studies*, in BEST PRACTICES IN QUANTITATIVE METHODS (Jason W. Osborne ed. 2007).
75. *GRE Comparison Tool for Law Schools*, EDUC. TESTING SERV. GRADUATE REC. EXAMINATION, [https://www.ets.org/gre/institutions/admissions/interpretation\\_resources/law\\_comparison\\_tool/](https://www.ets.org/gre/institutions/admissions/interpretation_resources/law_comparison_tool/)

law school grades tend to be measures of relative performance, in the national sample, we also collected each participant's law school of matriculation and used official ABA statistics to determine that school's median LSAT score.<sup>76</sup> We also created a binary variable for whether students were from racial/ethnic groups that our companion article found had LSAT test score disparities, meaning that they tended to score significantly lower on the standardized test compared to those identifying as non-Hispanic white.<sup>77</sup> Based on this empirical finding, this "test disparity" group composed 38.2% of our sample, and included those identifying as Black, Hispanic/Latinx, Native American, Native Hawaiian/Pacific Islander, and Puerto Rican, as well as those marking multiple races.

To assess the success of randomization, response bias, and matching, we tested all the demographics and baseline variables and found no significant differences at the 95% confidence level. In particular, the control and treatment groups had nearly identical LSAT scores of 156.8 (standard deviation SD=7.28) and 157.0 (SD=7.67), which suggests that the mix of random assignment and response to data collection surveys (in the national group) and self-selection with matching (in the UArizona group) created comparable groups.

For attrition over the study period, associations between key demographic variables were examined. We define attrition in terms of students who enrolled into the program and provided any valid data but did not complete their JD-Next course final exam. As shown in the appendix, we found that participants who attrited did not differ significantly from those who remained in the study on key demographic characteristics. The UArizona sample, however, showed significantly more attrition than the national sample (perhaps because scheduling of the course overlapped with the start of the school semester, as discussed in the qualitative responses below).

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(last visited Jan. 9, 2021). The ETS conversion tool relies on the verbal and quantitative scores from the GRE but not the analytical writing score.

76. 2019 1L ENROLLMENT, *supra* note 70.

77. See Findley et al., *supra* note 1 (finding test score disparities versus non-Hispanic whites for all groups of law students, except for Asians). See also 2019 1L ENROLLMENT, *supra* note 70 (showing that 6% of matriculating 1Ls are Asian, the same proportion as shown by the U.S. census); but see Vivia Chen, Opinion, *Why U.S. News & World Report Failed Diversity 101*, BLOOMBERG L., April 2, 2021, <https://news.bloomberglaw.com/business-and-practice/why-u-s-news-world-report-failed-diversity-101-vivia-chen>.

**Table 2:** *Demographics for Total Sample (National and UArizona) at Baseline by Group*

	Control ( <i>N</i> =182)	Treatment ( <i>N</i> =179)	All ( <i>N</i> =361)
Age in Years, Mean ( <i>SD</i> )	26.19 (6.34)	25.88 (5.69)	26.03 (6.02)
LSAT Mean ( <i>SD</i> )	156.8 (7.28)	157.0 (7.67)	156.9 (7.48)
Gender			
Male	40.4%	41.1%	40.8%
Female	59.6%	58.9%	59.2%
Race / Ethnicity			
Asian	14.6%	13.5%	14.0%
Black/African American	12.4%	15.2%	13.6%
Hispanic/ Latinx	10.1%	9.0%	9.6%
White (Non- Hispanic)	47.2% 1.1%	44.4% 1.1%	45.8% 1.1%
American Indian or Alaska Native			
Other/Multirace	14.6%	17.1%	15.8%

*Note:* Total sample includes national randomly assigned treatment and control groups, along with UArizona treatment and propensity-score-matched control group. LSAT scores include converted GRE equivalents, using the ETS official tool. Percentages (%) refer to the valid percentages for each categorical demographic variable. Using chi-square tests for nominal variables and *t*-tests for continuous variables, we found no significant differences between the treatment group and control group.

### III. Results

Our primary research questions involve the effect of JD-Next course participation on student’s first-semester grades. In addition, we are interested in participants’ self-reported student confidence going into law school, their self-rated skills, and their qualitative feedback on the course itself.

#### *A. Efficacy of Course on JD-Next Exam and 1L Course Grades*

We conducted path analysis using a structural equation modeling framework to assess intervention effects on three key outcome variables: the program final exam score (proximal), 1L contracts grades, and 1L first-semester grades (distal). Using a path model (see Figure 1 and Figure 2), we were able to control for

inflated Type I error rate with multiple outcomes. As Lei and Wu explain, “Path analysis is an extension of multiple regression in that it involves various multiple regression models or equations that are estimated simultaneously. This provides a more effective and direct way of modeling mediation, indirect effects, and other complex relationship among variables.”<sup>78</sup> Using path analysis, we were able to examine multiple predictors and covariates predicting several dependent outcome variables simultaneously, without inflating the p-value with multiple analyses and thus restricting Type I error rates. This method also allowed us to compare multiple groups in one model to examine interaction effects from a categorical variable such as race/ethnicity predicting key outcomes.

We adjusted for three covariates: students’ LSAT score (created by subtracting LSAT scores from university LSAT medians to adjust for university effects), gender, and test score disparity groups (as defined above) for each outcome. We also accounted for missing data using full information maximum likelihood estimations (FIML), which allowed us to preserve the total pooled sample size with missing data imputed using information from existing data.<sup>79</sup> To explore causes of missingness, we conducted attrition analysis for all of our key variables and did not find that missingness in our data was related to any key covariates. We followed the intent-to-treat approach to preserve the sample size of 361 of students in control groups (propensity score matched for UArizona, randomized for national sample) and treated groups even if they did not complete the course.<sup>80</sup> Model diagnostics, standardized coefficients, and standardized effect sizes are shown in the appendix.

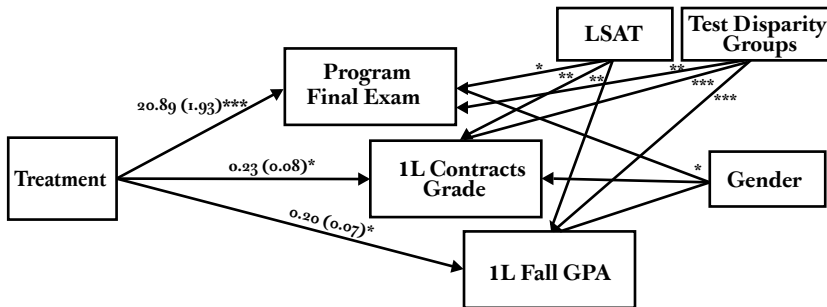
In the full sample, on the final exam (with 59 points possible), the treatment group on average had a 20.89-point higher exam score than the control group, holding LSAT scores, gender, and test score disparity groups constant ( $p < .001$ , 95% CI [17.10, 24.67]). The treatment group on average had a 0.23-point higher (out of 4.0) contracts grade point than the control group, holding LSAT scores, gender, and test score disparity group status constant ( $p = .004$ , 95% CI [.07, .38]). The treatment group on average had a 0.20-point higher first-semester GPA (on a 4.0 scale) than the control group, holding LSAT scores, gender, and test score disparity group status constant ( $p = .004$ , 95% CI [.07, .38]). It bears emphasis that, in accordance with the intent-to-treat principle, this efficacy estimate is for all those merely exposed to the intervention course at all, regardless of completion.

78. Pui-Wa Lei & Qiong Wu, *Introduction to structural equation modeling: Issues and practical considerations*, 26 *EDUC. MEASUREMENT: ISSUES AND PRAC.* 33, 34 (2007).
79. Rather than deleting cases where data is missing, or imputing the values of missing data, FIML estimates the likelihood function for each individual based on the variables that are present, so that all the available data are used. FIML has been shown to produce unbiased parameter estimates and standard errors under the (unverifiable) assumption that data are missing at random. CRAIG K. ENDERS, *APPLIED MISSING DATA ANALYSIS* (2010).
80. John M. Lachin, *Statistical Considerations in the Intent-to-Treat Principle*, 21 *CONTROLLED CLINICAL TRIALS* 167 (2000).

As shown in the appendix, we separately analyzed only the students in the national sample ( $n = 263$ ) who were randomly assigned to an active control group versus the intervention course. Results were similar to those in the larger group, though point estimates were slightly smaller. The randomized treatment group on average had a 19.24-point higher exam score ( $p < .001$ , 95% CI [15.96, 24.58]), a 0.22-point higher 1L contracts grade point ( $p = .025$ , 95% CI [.04, .41]), and a 0.18-point advantage in first-semester GPA ( $p = .025$ , 95% CI [.04, .35]).

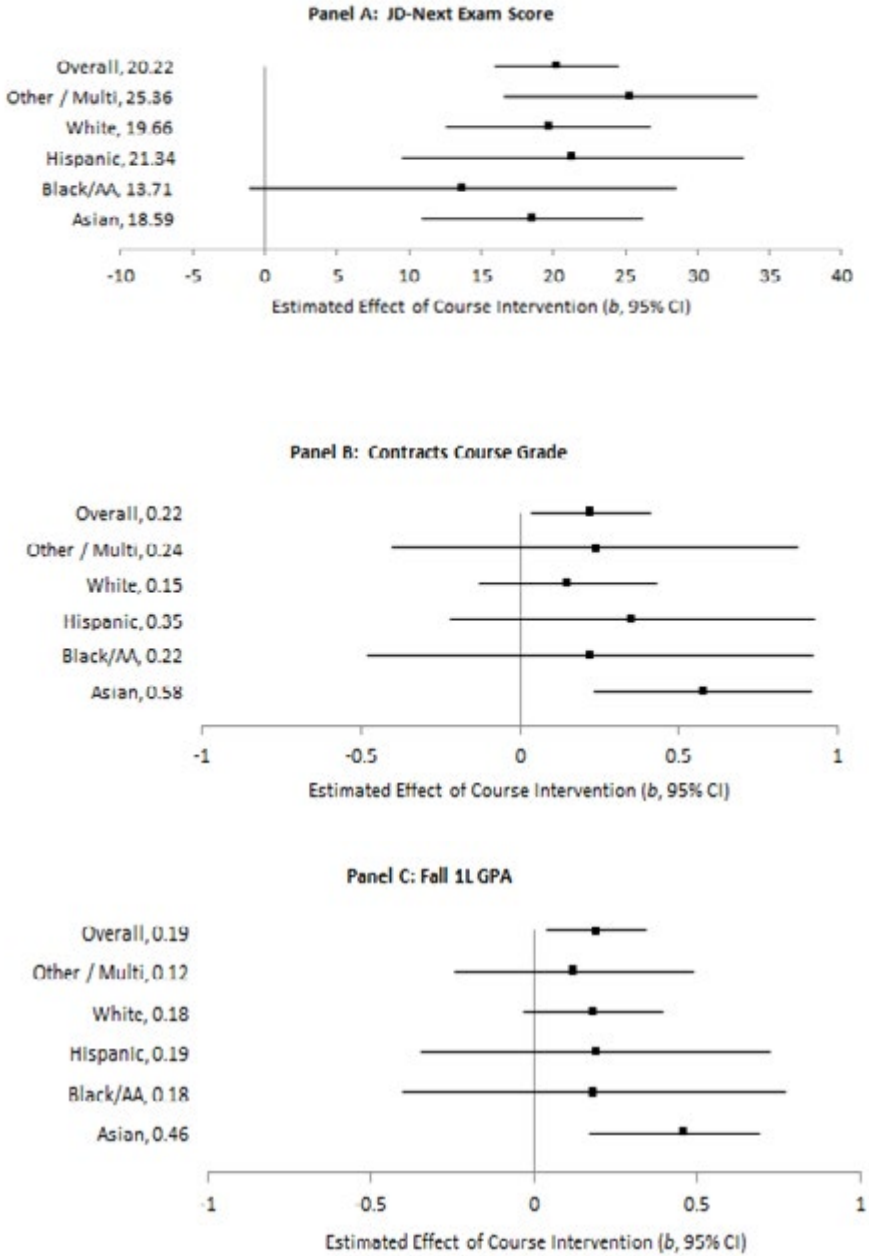
We also sought to understand whether course participation was beneficial for students' outcomes in various racial and ethnic subgroups. Figure 2 is a forest plot that reflects our estimates for various subgroups of the impact on JD-Next exam, 1L contracts grade, and 1L first-semester GPA showing 95% confidence intervals. Across all three outcomes for all five groups, we found positive point estimates, though they varied higher and lower than the overall effects. For the more distal outcomes, confidence intervals often ranged across zero. As shown in the plot, Black students demonstrated positive point estimates similar to other groups, including non-Hispanic whites, but marginal course efficacy on final exam score.

**Figure 1:** Path Analysis of Effect of Course Treatment on Final Exam, 1L Contracts Grade, and First-Semester GPA Using Pooled National and Arizona Samples ( $N=361$ )



*Note:* Treatment is exposure to JD-Next course, regardless of completion. Asterisks (\*) indicate statistical significance (\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ). Regression Coefficients  $b$  (SE) have been included for key outcomes. LSAT includes converted GRE scores. Test disparities groups include respondents who identify as Black, Hispanic, American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Puerto Rican, or multiracial. Model diagnostics and standardized coefficients and effect sizes are shown in the appendix.

**Figure 2:** *Effects of Program Participation on JD-Next Exam (Panel A), Contracts Grade (Panel B), and Fall 1L GPA (Panel C)—Overall and for Racial/Ethnic Groups*



*Note:* “White” refers to non-Hispanic whites.

*B. Self-Reported Student Assessments and Confidence*

In this section we describe the students’ self-reported skill development and satisfaction. These findings include quantitative and qualitative data.

Both immediately after the JD-Next program and again after their first semester of law school, we asked participants who completed the course to reflect on whether the course contributed to their development. We found that responses to “How much has your experience in this program contributed to your knowledge, skills, and personal development in the following areas?” differed by groups. Percentages for each of the response categories collapsed for highest and lowest are reported in Table 3. No data were missing.

**Table 3:** *Post-Course Survey Responses to Whether Course Helped; Percent Responding in Top Two Categories (Quite/Much)*

	National Control <i>N</i> =60	National Treatment <i>N</i> =47	UArizona Participants <i>N</i> =28	Significance of Difference
clear writing	32%	32%	29%	-
critical thinking	57%	60%	64%	*
legal skills & knowledge	28%	81%	82%	**
solve legal problems	17%	63%	64%	**
spot issues	42%	81%	75%	**

*Note:* Chi-square analyses were performed to assess statistical significance among the different ratings. Asterisks indicate that differences were significant (\* indicating  $p < .05$ , \*\* indicating  $p < .01$ ), comparing the national control ( $n=60$ ) versus all those participating in JD-Next ( $N=75$ ).

As expected, the national control group generally had the lowest rates of self-assessed improvement in skill development due to the program, with the exception of writing. Both treatment groups indicated that legal skills and knowledge and ability to spot issues showed greatest development. For example, students randomized to the national treatment group were three times as likely to say that the program contributed to their ability to solve legal problems, and were almost twice as likely to say that it helped them to spot issues compared with those randomized to the placebo course.

After the first semester of law school, we asked this question again. As in the immediate post-course survey, the national control group credited the program with writing skill improvement slightly more than the other groups did (Table 4). Compared with the post-course evaluation (Table 3), students were less likely to credit the program with their skill development after their first semester of law school except in solving complex legal problems, which saw an increase in higher skill development due to the program.

**Table 4:** *Post-Fall 1L Semester, Survey Responses to Whether Course Helped; Percent Responding in Top Two Categories (Quite/Much)*

	National Control N=42	National Treatment N=58	UArizona Participants N=19	Significance of Difference
clear writing	22%	21%	16%	-
critical thinking	38%	38%	32%	*
legal skills & knowledge	17%	50%	63%	**
solve legal problems	10%	36%	79%	**
spot issues	41%	60%	63%	**

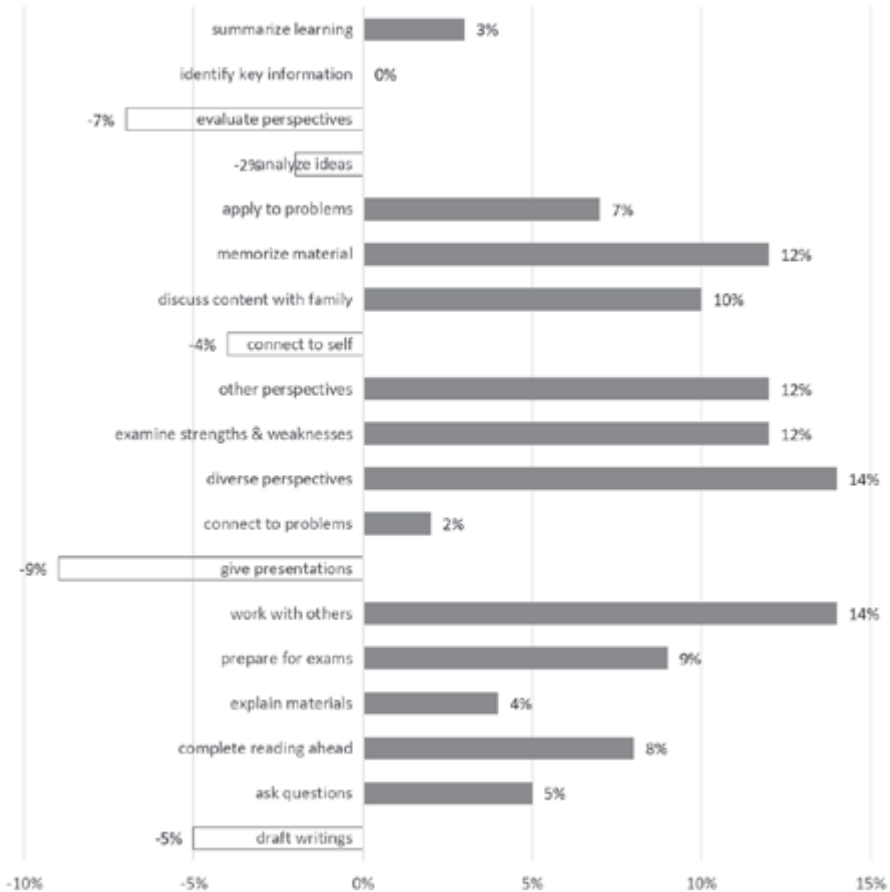
*Note:* Chi-square analyses were performed to assess statistical significance among the different ratings. Asterisks indicate that differences were significant (\* indicating  $p < .05$ , \*\* indicating  $p < .01$ ), comparing the national control ( $n=42$ ) versus all those participating in JD-Next ( $N=77$ ).

As another self-reported outcome, we asked students to report their confidence in attending law school before and after taking the course, and again after their first semester of law school. We used nineteen items contextualized in law school settings to assess students' confidence levels before (T<sub>1</sub>) and after (T<sub>2</sub>) the intervention. Students were asked "Because of your participation in the program, how confident are you about doing the following in law school?" as a precursor to a list of tasks and skills related to law school and the legal profession. They responded on a five-point scale of very confident, more confident, confident, less confident, not confident. There were no missing data on each item completed. The items had high internal consistency on both time points (T<sub>1</sub>  $\alpha = .91$ , T<sub>2</sub>  $\alpha = .93$ ).

In Figure 3, we show the differential responses of students in the national (randomized) sample who reported "more confident" or "very confident" for each task/item listed, comparing treatment vs. control group differences, post-1L fall semester. Students in the treatment group rated higher confidence for thirteen tasks, lower confidence for four tasks, and equal confidence for one task, compared with the control group. Because the JD-Next course included no coverage of making presentations, it is unsurprising that the control group rated it just as high (or higher). The control group was tasked with writing essays about legal issues on televised dramas, but without any other course content, it is similarly sensible that they rated the evaluation of perspectives and the drafting of writings more highly than the treatment groups. As noted, in most areas, the JD-Next treatment group rated higher task confidence.



**Figure 3:** Post-1L Fall Student Confidence Differences between National Sample Treatment and Control Groups



Note: Comparing group differences in percentages of those who reported “more” or “very” confident for each skill improvement (positive differences = higher rate of high confidence in the treatment group compared with the control group, i.e., bars marked in grey).

To statistically test differences between the treatment and control groups, we resort to regression modeling, focusing on the national sample, specifically, as members of this group were randomized into the treatment and control experimental conditions, and students completed both T<sub>1</sub> and T<sub>2</sub> surveys. First, a confidence composite was created for each time point (T<sub>1</sub>, T<sub>2</sub>) of assessment by averaging scores of all items per participant. We accounted for missing data using full information maximum likelihood estimations (FIML) and adjusted for baseline confidence (T<sub>1</sub>) and a covariate test score disparity group student status.

Results showed that after adjusting for baseline confidence, gender, and marginalized group status, as well as missingness, the overall intervention effect on post-course confidence ( $T_2$ ) was marginally significant. Although we cannot rule out the null hypothesis, results indicate that treated students had an overall 0.18-point trend of gain in confidence over their control group counterparts ( $p = .091$ , 95% CI [-0.03, .39]).

We further sought to understand whether these intervention effects showed differential outcomes for the confidence of students from different racial/ethnic backgrounds. Results showed that the intervention effects were significant for Hispanic students, indicating that these students in the treatment group overall had a 0.44-unit higher level of post-course confidence compared with their control group counterparts ( $p = .001$ , 95% CI [.17, .70]). For students who indicated “other” for race/ethnicity, we found marginally significant trend of 0.46-unit higher level of post-course confidence ( $p = .078$ , 95% CI [-0.05, .97]). At traditional levels of statistical significance, we did not find significant effects in students of other racial/ethnic backgrounds.

### *C. Qualitative Feedback on the Course*

In both of the post-course surveys (immediately post-course and post-fall semester), we asked other evaluative questions and asked students to write their own comments and reactions to the course, which we systematically coded. We report more on our methods and the most common codes in the appendix and discuss highlights below.

A total of 136 students responded to the post-course evaluation. Student responses to “What has been the most satisfying about your experience in the program?” differed by group.<sup>81</sup> In both the national treatment group ( $n=44$ ) and UArizona group ( $n=27$ ), respondents frequently mentioned preparation for law school (43% and 58%, respectively) and the legal profession (21% and 19%). Asked what they found most disappointing about the program experience, for the national treatment group ( $n=44$ ), the content of the class (23%), lack of or delayed feedback on assignments (16%), not having enough time for the course (18%), and the timing of the class overlapping fall classes (16%) were mentioned about as often as “nothing” disappointing (16%).<sup>82</sup> The 27 UArizona respondents were most disappointed by timing conflicting with fall semester (37%), lack of feedback (15%), and lack of time to do the course (15%), with about a quarter disappointed by nothing (26%).

Respondents’ greatest worries about starting law school were heavily academic for all groups (national control=48% of fifty-eight respondents, national

81. For the sake of brevity, we often omit the responses of students in the national control group. But it is notable that they were most satisfied by their ability to analyze legal television shows (27%) and were most disappointed by class content (40%), mismatch between content and exam material (18%), and a general sense that they learned nothing of use (17%).

82. The course officially ran from July 1, 2019, to August 14, 2019. Students were given until September 1, 2019, to complete the final exam. Most law schools start their fall semester in mid-August. In 2019, the University of Arizona College of Law started on August 19.

treatment=28% of 42, UArizona=41% of 27). Within this category, students cited concerns such as “exams,” “keeping my 3.0 [GPA],” “cold calls” and generally “being overwhelmed.” Similarly, “time management” and “keeping up with the workload” fears also accounted for many responses (about one-third, in all three groups).

As expected, most students in the national control group ( $n=55$ ) reported that the blinded placebo experience did not change their impression of law school (53%); however, 29% of this group reported generally feeling better prepared for law school. For the JD-Next national treatment ( $n=40$ ) and UArizona groups ( $n=25$ ), being ready for law school (33% and 36%, respectively) was more common than “no change in impression” (28% and 24%).

In a second survey after the first semester of law school, 122 students responded. All three groups’ most common response to “most satisfying experience about the program” was preparation for law school (national control=25% of 55 respondents, national treatment =37% of 41, UArizona=29% of 17). This finding of perceived benefit, even in the control group, suggests the importance of having a blinded placebo group to get unbiased estimates of the actual program efficacy. The national treatment (20%) and UArizona groups (24%) were more likely to talk about general skill development and the development of reading skills in particular (national treatment=27%, UArizona=24%).

Overall, the three groups differed in expected ways. The national control group had complaints about the television shows that they watched and how this related to law school preparation. This group did not do any legal reading or watch lecture videos, so they found the program most helpful for developing writing and analytic skills. Both groups that received the JD-Next course found it beneficial preparation for law school but would have liked more timely, specific feedback on assessments and more time to get tasks completed.

Students overall appreciated the opportunity to “get ahead” on law school content and practice with learning and tasks similar to what they would be doing, both academically and professionally. This was evident both in their responses to the selected-response items about how the program helped them prepare as well as their open-ended writings.

We did see an interesting shift between the immediate surveys and post-fall surveys. After students were in law school, the shift of their suggestions from “more time to do tasks” in the program to “I wish we had more . . .” exposure and experiences like law school demonstrates a recognition that the tight deadlines were realistic and that learning more content might have better prepared them for the variety of law school content. Some of the foregoing frustration expressed with JD-Next for a heavy workload and minimal in-course feedback may be a useful precursor exposure to the actual experience of attending law school, even if not optimal for pedagogy or comfort.

Students’ requests for more and timely feedback on their program assessments are understandable and potentially feasible, depending on program size and support. Future iterations of JD-Next should also consider ways to

provide more opportunities for interactions among students and students with instructors within the online environment for academic and social purposes. While adding more content in the short summer schedule may be impractical, making clear that this program focuses on particular content might help with student expectations. However, when people like an experience, it is reasonable for them to want more.

We also surveyed students who left the study before completion (national control  $N=13$  and national treated  $N=22$ ), and they revealed responses much like those who stayed to the end. Those who did not complete had two open-ended items in their survey. For the first, "If your study habits changed, in what ways did they change? Please elaborate," they expressed surprise about the increased amount and difficulty of the work required in law school ( $n=23$ , 66%). Only 1 respondent (3%) indicated decreased interest and motivation in law school courses. Eight students (23%) responded to a question that asked their thoughts on how to improve the program. Of those, 3 thought that the program was overwhelming or too much work, 2 would have preferred more variation in content and assignments, 2 suggested that the schedule was inconvenient, and 1 "thought it was great and the professor was fantastic."

#### **IV. Strengths and Limitations**

Our study was the first systematic evaluation of the efficacy of a prelaw preparation program with an active control group, randomization, and actual law school grades as a primary outcome. There are methodological strengths and limitations to note.

Our national and UArizona research groups have different strengths and weaknesses. Where the national group was enriched for racial and ethnic diversity and utilized random assignment and an active control, it was subject to potential biases in students' not reporting or misreporting their own grades (the primary outcome variable). To reduce this risk, we also paid participants to provide PDFs of their transcripts, but not all did so, leaving a remaining risk of nonresponse bias. Students who received lower grades may be less likely to report them, however, and in theory this could happen differentially across treatment versus control groups. On the other hand, the UArizona group had the advantage of administrative data for all those in the treatment and no-contact group, which eliminates missing data problems, and especially self-reporting and nonresponse bias for the primary outcomes. However, UArizona students were not randomized but instead allowed to self-select into the program, which may reflect greater motivation and wherewithal, which independently drives better outcomes. Both the UArizona and national samples suffered from self-selected attrition.

For these reasons, the final research population falls short of an ideal randomized controlled trial. However, we have good balance on observable covariates, and any real-world application of such a program will be subject to the confounding factor of student effort and interest. We also used an intent-to-treat (ITT) design for our primary efficacy analysis, which counts all students who

began the course, even if they later chose to drop out (as 62% of them did, as shown in the appendix). The ITT approach preserves the full sample, increases statistical power, and takes into account any exposure to the course. However, ITT underestimates the effect of course completion, since it includes both the compliant and noncompliant participants.<sup>83</sup>

The substantial attrition also limited our statistical power. Notwithstanding our extensive efforts to enrich our sample with underrepresented students, and similar point estimates for efficacy across all groups, we are unable to rule out the null hypothesis that the course has no effect for particular racial/ethnic subgroups (including whites as a subgroup). It bears emphasis that, while substantial and significant, our primary findings are on the pooled effects.

Although we preregistered our experiment, as the first rollout of the JD-Next program in the field, our experiment was subject to various changes along the way. The most notable change along the way was that we had intended to secure grades for the entire 1L year, but the COVID-19 pandemic caused many law schools to move to pass-fail grading. Whether the efficacy of the JD-Next course will persist throughout the first year, and throughout law school to the bar exam, are questions for future study. Our analyses are best understood as exploratory, to be confirmed (or falsified) in a follow-up study already in the works.

As the reported model diagnostics in the appendix suggest, our specifications provide reasonable models for the data and are based on a theory-driven approach to the selection of covariates. Nonetheless, some of our findings may be model dependent. Future analyses should also investigate other predictors and mediators—for example, the role of parents' education, socioeconomic status, and undergraduate GPA and majors, disaggregating specific racial and ethnic groups—and how these interact with JD-Next to produce law school success.

Our use of an active placebo (watching law-related TV shows and writing short essays about them) in the national randomized experiment deserves further discussion. On the one hand, we were concerned that the JD-Next course's mere engagement over the weeks preceding law school could be beneficial for students, potentially causing them to develop other behaviors or attitudes that may be beneficial for their confidence or performance in law school. A passive control group would then create a confound between mere engagement and the actual curriculum, preventing causal inference about the curriculum itself. So the active placebo allowed us to roughly approximate similar levels of engagement, assuring that differences we observed were due to the actual JD-Next curriculum. To the contrary, one might worry (as a peer reviewer expressed) that watching and writing about law-related television shows actually harmed matriculating law students; fortunately, the JD-Next course efficacy estimated in our Arizona-based cohort, which relied on comparisons to a no-contact control group, belied this concern.

83. See, e.g., Joshua D. Angrist et al., *Identification of Causal Effects Using Instrumental Variables*, 91 J. AM. STAT. ASSOC. 444 (1996).

A final limitation of this study is that all of the participants were intending to matriculate at law schools just a few months later. The JD-Next program could in the future be offered earlier in the admissions process, such as during a student's junior year in college. Such earlier participation may have greater diagnostic value for both the student and admissions officers to determine whether the student is a good fit for law school. However, the effects of the course may be more likely to dissipate in the time before actually attending law school.

## V. Discussion and Conclusions

The JD-Next opens a new wave in a broader conversation about how to bring more diverse populations of learners into postgraduate and professional studies, how to better assess their likelihood of success, and how to support that success, all with measurable outcomes. With the companion article showing the reliability and validity of JD-Next exam as a tool for law school admissions, the JD-Next program links the essential functions of preparation and prediction in a way never before achieved.<sup>84</sup>

Our findings suggest a significant and substantial benefit for enrolling in the JD-Next course on key law school outcomes, nearly six months later. The practical significance of a 0.20-point increase in first-semester GPA may be substantial. Given our intention-to-treat approach, these effects are estimated for those who merely *begin* the course; but *completing* the course may yield even more substantial benefits. And to be sure, law school GPA has important implications for bar passage, employment, and early career success.<sup>85</sup>

Notably, our research population consists of a very diverse group of students in terms of race and ethnicity, with fewer than half of respondents identifying as white non-Hispanics. Our work is geared toward an equitable enhancement in law school preparation and academic outcomes for each racial/ethnic group.<sup>86</sup> The current paper explores whether this hypothesized effect is true. Our goal is to create a more inclusive environment for law students and demonstrate that our prep course can yield gains in their first-year law school performance and beyond as they train to become professionals in the legal field.

Our intervention was efficacious in improving both proximal (exam scores) and distal (1L contracts grades and 1L fall semester GPA) outcomes when examining students of all backgrounds. We were pleased to see that the majority of racial/ethnic student groups showed positive, statistically significant gains for

84. See Findley et al., *supra* note 1.

85. Amy Farley et al., *A Deeper Look at Bar Success: The Relationship Between Law Student Success, Academic Performance, and Student Characteristics*, 16 J. EMPIRICAL LEG. STUD. 605 (2019) (finding that first-year grades were significant predictors of bar passage); Jeffrey Evans Stake et al., *Income and Career Satisfaction in the Legal Profession: Survey Data from Indiana Law Graduates*, 4 J. EMPIRICAL LEG. STUD. 939, 970, 973 (2007) (finding that five years after law school, "each additional 0.1 on the graduate's [L]GPA yields \$3,449 in additional annual income," but by 15 years after, LGPA has no effect on income).

86. See generally H. Richard Milner IV, *Race, Culture, and Researcher Positionality: Working Through Dangers Seen, Unseen, And Unforeseen*, 36 EDUC. RESEARCHER 388 (2007).

the proximal outcome, including those of Hispanic, Asian, and other/multiracial backgrounds. For the more distal outcomes of contracts grade and fall GPA, we do not have statistical significance for treatment estimates of each racial group separately, but the relatively consistent trending point estimates are promising. We are eager to continue to incorporate disparity-reducing iterations of JD-Next into future implementations on the JD-Next course.<sup>87</sup>

If this program were targeted to underrepresented students in particular, either exclusively or with overrepresentation as in our experiment, JD-Next may have sizable benefits to reduce disparities. While the program was offered free of charge during this research phase, as it moves into a more programmatic phase, the ultimate economic model remains to be determined. Yet such questions of access and inclusion are critical. Several approaches are conceivable, ranging from affirmatively marketing the program to underserved populations to providing subsidies or giving priority enrollment to directly limiting the program enrollment to such groups, whether directly on the basis of race/ethnicity (where legal) or indirectly (using family educational or socioeconomic achievement). Of course, it also bears emphasis that absolute improvement in the performance of underrepresented students has value, even aside from the change in relative performance compared with other groups.

Given that this is the first study of its kind, we are unable to disaggregate which parts of the JD-Next intervention are essential to driving its benefits or to determine whether other potential modules could be even more beneficial. For future iterations of JD-Next, one possibility is to supplement our focus on law school skills and common-law cases with noncognitive, motivational approaches.<sup>88</sup> For example, a “growth mindset” intervention would seek to convince students that their academic success or failure depends not on fixed factors, such as innate ability, but on their efforts—i.e., a student becomes smarter by working harder.<sup>89</sup> In one study, for example, college students participating in the growth mindset intervention increased their GPAs in the following academic term by 0.23 points, and African American students in particular demonstrated increased engagement and identification with the school.<sup>90</sup> A recent effort for the California State Bar developed a program “to help test takers find productive ways to interpret the challenges, obstacles, and negative

87. See generally Sha-Shana Crichton, *Incorporating Social Justice Into the 1L Legal Writing Course: A Tool for Empowering Students of Color and of Historically Marginalized Groups and Improving Learning*, 24 MICH. J. RACE & L. 251; Alexi Freeman, *From Symposium to Action: Five Ways for Law Schools to Bridge the Gap Between Students and Marginalized Communities*, 94 DENV. L. REV. 511 (2017).

88. See generally Emily Zimmerman & Leah Brogan, *Grit and Legal Education*, 36 PACE L. REV. 114 (2015).

89. See generally David S. Yeager et al., *A National Experiment Reveals Where a Growth Mindset Improves Achievement*, 573 NATURE 364 (2019); David S. Yeager & Carol S. Dweck, *What Can Be Learned From Growth Mindset Controversies?* 75 AM. PSYCH. 1269 (2020); Michael Broda et al., *Reducing Inequality in Academic Success for Incoming College Students: A Randomized Trial of Growth Mindset and Belonging Interventions*, 11 J. RES. EDUC. EFFECTIVENESS 317, 318–19 (2018).

90. Joshua Aronson et al., *Reducing the Effects of Stereotype Threat on African American College Students by Shaping Theories of Intelligence*, 38 J. EXPERIMENTAL SOC. PSYCH. 113 (2002).

psychological experiences associated with preparing for the bar exam,” which when rigorously evaluated was found to have increased bar passage by 6.8% to 9.6%.<sup>91</sup> Similarly, a growth mindset intervention can be incorporated into the JD-Next course via a dedicated module, and as a theme recurring in peer reviews, written assignment revisions, self-evaluations, and teaching assistant interactions.

If the JD-Next course is offered further upstream, for example, to undergraduate students deciding whether to even pursue law school, other revisions may be worthwhile. In that setting, greater emphasis on the law school experience and perhaps even career pathways in law, could be worthwhile.

Future work should also explore whether the JD-Next course may have particular value for international populations of students. Such students may get greater benefits from exposure to the American caselaw method and English-language instruction before arriving at law school.

We are replicating our study, using more participants and administrative data from more participating law schools.<sup>92</sup> For the subsequent cohorts, we are working to improve engagement and support throughout the course to improve course retention, for example by including professional identity modules and synchronous time with greater numbers of teaching assistants. Additional cohort experiences, perhaps around social justice may also be helpful. To further reduce attrition, one possibility would be to include additional or alternative course content beyond contract law, such as criminal law, racial justice, or environmental law, which may build on students’ preexisting motivations and interests, but still focus on skill development (case reading and issue spotting) in those other areas. Our findings of efficacy not just on contracts course grade outcomes but for 1L GPA generally, suggest that we may be able to develop these same skills even without targeting a traditional 1L course.

Future work should also explore whether the JD-Next program benefits are sustained through the spring semester grades, through subsequent years of law school, and perhaps even through graduation and bar passage. Although these outcomes are known to be correlated with first-year grades, direct research would be worthwhile.

Ultimately, JD-Next is just one of multiple potential ways to prepare students for law school. With a paucity of rigorous research on other approaches, it is now difficult to say what may be the optimal approach. However, JD-Next is an important entrant, with its research-based scalable and inclusive approach to purposefully building the skills needed for success. The companion paper suggests that, in addition to the efficacy shown here, the JD-Next exam is

91. Victor D. Quintanilla et al., *Mindsets in Legal Education: Evaluating Productive Mindset Interventions that Promote Excellence on California’s Bar Exam* (June 25, 2020), <https://www.calbar.ca.gov/Portals/o/documents/reports/Mindsets-in-Legal-Education-Executive-Summary.pdf>.

92. Heather M. Buzick et al., *The Association of Participating in a Summer Prelaw Training Program and First-Year Law School Students’ Grades*, 36 J. OF EDUC. RSCH. & PRAC. 181-202 (2023).



also a valid and reliable predictor of law school performance.<sup>93</sup> If successfully combined, these two functions could create greater efficiencies for law school aspirants so that their effort to prepare for an admissions test also pays off with improved law school performance.

## VI. Appendix

We present additional information here, including participant recruitment, sample-specific attrition analyses, model diagnostics, and detailed reporting of qualitative codes.

### *A. Participant Recruitment and Incentives*

Given the goal to understand whether JD-Next had strong efficacy and predictive power for underrepresented minorities in particular, of the 11,587 invitations we sent for the national sample, we oversampled Asian (1639 invitations sent, 14% of the total), Hispanic (2416, 21%), Native American or Native Hawaiian (137, 1%), and Black or African American (2798, 24%). To encourage the participation of Native students, we enlisted the course designer and leading Native American law professor Rob Williams to write a special invitation e-mail. Uptake (defined as enrolling in the course and submitting baseline data) varied by race/ethnicity from 1.2% for Hispanics, 1.8% for Black or African Americans, 1.8% for whites, 2.1% for Native Americans, and 2.6% for Asian Americans. While small in absolute numbers, with so many observations, these differences were statistically significant ( $p=.03$ ).

Admission to the national control and experimental groups study was stratified by race/ethnicity. Specifically, as participants within each ethnic group were admitted to the study, they were alternately assigned to experimental and control groups.

As shown in Table 2, the average age of participants (across the combined Arizona and national samples) is twenty-six years (similar in both treatment and control groups). For the University of Arizona incoming class of 2019, this age is exactly representative.<sup>94</sup> Since age is not an ABA-required disclosure for schools, it is difficult to compare our national sample to any baseline, but one can infer that a substantial number of JD-Next students did not come directly from undergraduate studies.

As noted in Part II.C above, students were not assessed any fees to take the course. Rather, in the national sample, participants were offered payments of \$100 in total for completing the study—\$25 to be completed at the end of the seven-and-a-half-week intervention period, and \$75 to be paid upon submission of their first-semester iL grades. We later added a \$30 bonus for students to submit PDF versions of actual transcripts, in order to reduce self-response biases and errors.

93. See Findley et al., *supra* note 1.

94. *Wildcat Wednesday Letter of the Law*, UNIV. ARIZ. JAMES E. ROGERS COLL. L. (August 21, 2019), <https://lotl.arizona.edu/aug212019.htm> (“The average age of the JD class is 26....”).

Separately and in addition, we also paid students bonuses to incentivize effort on the final exam. We designed the incentive structure to motivate effort at all levels of the performance curve. Specifically, the informed consent document explained, “for your cooperation in the study, you will be entered into a drawing for \$125 prizes a number of times based on your rank in the exam performance in your respective course section (*i.e.*, for each exam question correctly answered, you will have an additional chance to win the drawing).”

Students in the control group received the same incentive structure for continuing in the course as the students in the treatment intervention course. Importantly, the students in this national control group also took the final exam and were incentivized for performance, just like the students in the treatment group.

To minimize attrition as the course proceeded, participating students from both cohorts received incentive drawings for meeting milestones throughout the course. Taking advantage of loss aversion,<sup>95</sup> we framed a total of \$45 in bonuses using a “banking” scheme, whereby students banked bonuses between \$5 and \$15 for each week completed. Once students completed the course, they received the accumulated cash bonus; the endowment was lost if they dropped out in a later week. We also offered additional tangible incentives to encourage students to stay on track, which included textbooks (2), law school T-shirts (4), and an iPad (1). Students who were on track at the time of the drawing were entered into the drawing.

### *B. Attrition*

As noted in Part II.C, we define attrition in terms of students who enrolled into the program and provided any valid data but did not complete their JD-Next course final exam. Nonsignificant chi-square tests and *t*-tests indicate that those participants who attrited did not differ significantly from those who remained in the study on key demographic characteristics. The UArizona sample, however, showed significantly more attrition than the national sample (perhaps because scheduling of the course overlapped with the start of the school semester, as discussed in the qualitative responses below). Table S1 shows chi-square results of attrition for all students on intervention condition, gender, race, and whether matriculated at UArizona or elsewhere. Notably, nonwhite students did not have higher attrition than white students. Table S2 shows *t*-test results of attrition for all students on age, LSAT (or converted LSAT from GRE scores), contracts grades, and fall GPA.

Next, we provide separate analyses for each group. Table S3 shows chi-square results of attrition for UArizona students on intervention condition (TX), gender, and race. Table S4 shows *t*-test results of attrition for UArizona students on age, LSAT, contracts grades, and fall GPA. Table S5 shows chi-square results

95. See, e.g., Amos Tversky & Daniel Kahneman, *Loss Aversion in Riskless Choice: A Reference-Dependent Model*, 106 Q. J. ECON. 1039 (1991).

of attrition for national students on intervention condition (TX), gender, and race. Table S6 shows *t*-test results of attrition for national students on age, LSAT, contracts grades, and fall GPA.

**Table S1:** Full Sample Attrition Analyses: Chi-square Results on Key Variables

Variable	$N_{baseline}$	Attrited		$\chi^2$	<i>df</i>	<i>p</i>
		<i>n</i>	(%)			
Intervention Condition	361	233	65%	0.99	1	0.32
Treatment	179	111	62%			
Control	182	122	67%			
Gender	353 (miss=8)	225	64%	0.90	1	0.34
Male	144	96	67%			
Female	209	129	62%			
Race	356 (miss=5)	228	64%	7.66	4	0.11
Asian	50	27	54%			
Black or African American	49	34	69%			
Hispanic or Latinx	34	19	56%			
White (Non-Hispanic)	163	114	70%			
Other/Multirace	60	34	57%			
Matriculation	361	233	65%	7.07	1	0.01
UArizona	98	74	76%			
Other Law Schools	263	159	60%			

*Note:* Pearson chi-square tests were used, and 2-sided asymptotic significance was tested for.

**Table S2:** *Full Sample Attrition Analyses: T-test Results on Key Variables*

Variable	$N_{baseline}$	Attrited			Completed			$t$	$df$	$p$
		$n$	$M$	$SD$	$n$	$M$	$SD$			
age	361	233	25.76	5.12	128	26.52	7.37	-1.04	195.71	0.30
LSAT	353	225	156.94	7.37	128	156.88	7.02	0.07	351	0.95

*Note:*  $p$ -value was assessed using two-tailed test ( $\alpha = .05$ ). In accordance with Levene's tests, we adjusted degrees of freedom for  $t$ -tests where equal variances were not assumed, i.e., for age.

**Table S3:** *UArizona Sample Attrition Analyses: Chi-square Results on Key Variables*

Variable	$N_{baseline}$	Attrited		$\chi^2$	$df$	$p$
		$n$	(%)			
Gender	97	73	75%	2.00	1	0.16
Male	61	43	70%			
Female	36	30	83%			
Race	98	74	76%			
Asian	7	4	57%			
Black or African American	0	0	-			
Hispanic or Latinx	4	3	75%	3.01	3	0.39
White (Non-Hispanic)	80	63	79%			
Other/Multirace	7	4	57%			

*Note:* Pearson chi-square tests were used, and 2-sided asymptotic significance was tested for. For the UArizona sample, 51% of the treatment group attrited; we did not include chi-square results comparing treatment vs. control conditions in this table, as the control group was matched via propensity scores, and none of them by definition completed the course.

**Table S4:** *UArizona Sample Attrition Analyses: T-test Results on Key Variables*

Variable	$N_{baseline}$	Attrited			Completed			$t$	$df$	$p$
		$n$	$M$	$SD$	$n$	$M$	$SD$			
Age	98	74	25.7	5.2	24	26.7	6.5	-0.8	96	0.44
LSAT	98	74	161.9	4.1	24	161.8	2.7	0.16	96	0.88

*Note:*  $p$ -value was assessed using two-tailed test. In accordance with Levene’s tests, equal variances were assumed for all  $t$ -tests. LSAT variable includes converted GRE scores.

**Table S5:** *National Sample Attrition Analyses: Chi-square Results on Key Variables*

Variable	$N_{baseline}$	Attrited		$\chi^2$	$df$	$p$
		$n$	(%)			
Intervention Condition	263	159	60%	3.49	1	0.06
Treatment	130	86	66%			
Control	133	73	55%			
Gender	256 (miss=7)	152	59%	1.02	1	0.31
Male	83	53	64%			
Female	173	99	57%			
Race	258 (miss=5)	154	60%	3.42	4	0.49
Asian	43	23	53%			
Black or African American	49	34	69%			
Hispanic or Latinx	30	16	53%			
White (Non-Hispanic)	83	51	61%			
Other/Multirace	53	30	57%			

*Note:* Pearson chi-square tests were used, and 2-sided asymptotic significance was tested for.

**Table S6:** National Sample Attrition Analyses: *T*-test Results on Key Variables

Variable	$N_{baseline}$	Attrited			Completed			<i>t</i>	<i>df</i>	<i>p</i>
		<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>			
Age	263	159	25.8	5.1	104	26.5	7.6	-0.8	163.1	0.42
LSAT	255	151	154.5	7.9	104	155.8	7.2	-1.3	253	0.20

*Note:* *p*-value was assessed using two-tailed test. In accordance with Levene's tests, equal variances were assumed for all *t*-test but age, for which we adjusted the degrees of freedom. LSAT variable includes converted GRE scores.

### C. Statistical Models

To assess course efficacy for exam scores and 1L grades, as described in Part III.A above, we used a path model in *Mplus* 8 to create structural equation models. Multiple fit indices were used to evaluate each proposed model, including the chi-square statistic ( $p > .05$ ), standardized root mean square residual (SRMR  $\leq .08$ ), root mean square error of approximation (RMSEA  $\leq .08$ ), and the comparative fit index (CFI  $\geq .90$ ). To examine intervention effects, we estimated effect coefficients, 95% confidence intervals, and total variance explained for each outcome. To examine practical significance, we assessed Cohen's effect sizes (*ES*) using the formula  $ES = B * SD_{predictor} / SD_{outcome}$  and reported them along with the results below.<sup>96</sup>

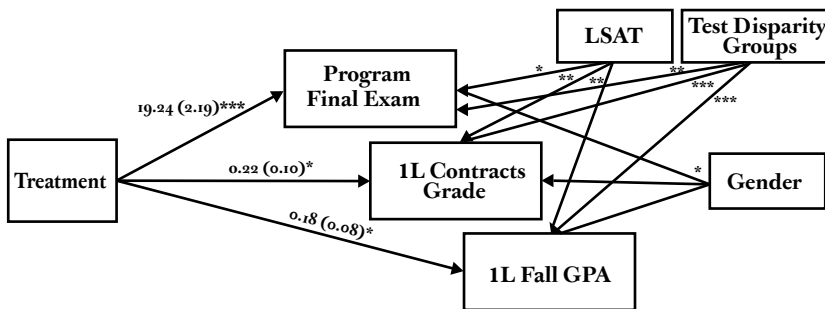
First, we assessed a path model (Figure 1) for the total pooled sample ( $N = 361$ ). Results yielded good model fit ( $\chi^2_{(361, 2)} = .11, p > .05$ , RMSEA = .00, 90% CI: [.00, .01], CFI = 1.00, SRMR = .01). The model revealed significant intervention effects for the final exam score ( $b = 20.89, SE = 1.93, \beta = .66, p < .001, 95\% CI [17.10, 24.67], ES = .66$ ). Approximately 53% of the total variance in final exam scores was explained ( $R^2 = .533, p < .001$ ), with a very substantial effect size. We found a significant effect on contracts grade ( $b = .23, SE = .08, \beta = .18, p = .004, 95\% CI [.07, .38], ES = .18$ ). Approximately 26% of total variance in contracts grade point was explained ( $R^2 = .261, p < .001$ ), with a smaller effect size. We found a significant effect on first-semester GPA ( $b = .20, SE = .07, \beta = .18, p = .003, 95\% CI [.07, .33], ES = .18$ ). Approximately 28% of total variance in first-semester GPA was explained ( $R^2 = .281, p < .001$ ).

Second, for the randomized groups only ( $n = 263$ ), we again predicted the same outcomes and controlled for the same covariates; we also imputed missing data from covariates in the pooled sample (including UArizona participants). Results yielded good model fit ( $\chi^2_{(361, 2)} = .11, p > .05$ , RMSEA = .00, 90% CI: [.00, .02], CFI = 1.00, SRMR = .01). As shown in Figure S1, the model revealed significant intervention effects for all three outcomes, including on the final exam score ( $b = 19.24, SE = 2.19, \beta = .60, p < .001, 95\% CI [15.96, 24.58], ES = .60$ ), 1L

96. *ES* = .1 has been considered a small effect, *ES* = .3 considered medium effect, and *ES* = .5 considered a large effect. Deborah Lowe Vandell et al., *Do Effects of Early Child Care Extend to Age 15 Years? Results from the NICHD Study of Early Child Care and Youth Development*, 81 *CHILD DEV.* 737 (2010).

contracts grade ( $b = 0.22, SE = 0.10, \beta = .17, p = .025, 95\% \text{ CI } [.04, .41], ES = .17$ ), and first-semester GPA ( $b = 0.18, SE = 0.08, \beta = .16, p = .025, 95\% \text{ CI } [.04, .35], ES = .16$ ). Results showed that the randomized treatment group on average had a 19.24-point higher exam score than the control group, a 0.22-point advantage in 1L contracts grade point compared with the control group, and a 0.18-point advantage in first-semester GPA over the controls, holding LSAT scores, gender, and tests score disparity group status constant. Approximately 48% of total variance in final exam was explained ( $R^2 = .482, p < .001$ ), with substantial effect size, 26% of total variance was accounted for in contracts grade ( $R^2 = .259, p < .001$ ), with smaller but substantial effect size, and about 28% of total variance was accounted for in first-semester GPA ( $R^2 = .276, p < .001$ ), with again smaller but substantial effect size.

**Figure S1:** Path Analysis of Effect of Course Treatment on Final Exam, 1L Contracts Grade, and First-Semester GPA in the Randomized National Sample ( $N=263$ )



Note: Treatment is exposure to JD-Next course, regardless of completion. Asterisks (\*) indicate statistical significance (\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ). Regression Coefficients  $b$  ( $SE$ ) have been included for key outcomes. LSAT includes converted GRE scores. Test disparities groups include respondents who identify as Black, Hispanic, American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Puerto Rican, or multiracial.

Third, as discussed in Part III.B above, to test the intervention effects toward students' post-course confidence levels, we used *Mplus 8* to assess multiple regression models. Multiple fit indices were used to evaluate the model, including the chi-square statistic ( $p > .05$ ), standardized root mean square residual ( $SRMR \leq .08$ ), root mean square error of approximation ( $RMSEA \leq .08$ ), and the comparative fit index ( $CFI \geq .90$ ). To examine intervention effects, we estimated effect coefficients, 95% confidence intervals, and total variance explained for each outcome. The model yielded good fit ( $\chi^2_{(263, 2)} = .008, p > .05, RMSEA = .000, 90\% \text{ CI: } [.000, .000], CFI = 1.000, SRMR = .000$ ). To examine practical significance, we assessed Cohen's effect sizes using the formula  $ES = B^*SD_{predictor} / SD_{outcome}$ .<sup>97</sup> We found a marginally significant effect ( $b = .18, SE = .11, \beta = .16, p =$

97. For interpretation of effect sizes, see *id.*

.091, 95% CI [-.03, .39],  $ES = .16$ ), with approximately 14% of the total variance explained in confidence ( $R^2 = .139$ ,  $p = .021$ ) and a small effect size.

We used *Mplus 8* to run a multigroup analysis to examine differential intervention effects on students of Asian, Black, Hispanic, white, and other backgrounds in the national randomized sample. The model yielded good fit ( $\chi^2_{(258, 5)} = .006$ ,  $p > .05$ , RMSEA = .00, 90% CI: [.00, .00], CFI = 1.00, SRMR = .003). Results showed that the intervention effects were significant for Hispanic students ( $b = .44$ ,  $SE = .14$ ,  $\beta = .63$ ,  $p = .001$ , 95% CI [.17, .70],  $ES = .63$ ) in particular, explaining approximately 44% of Hispanic students' total variation in post-course confidence ( $R^2 = .437$ ,  $p = .008$ ), indicating that students in the treatment group overall had a 0.44-unit higher level of post-course confidence, compared with their control group counterparts, with a medium effect size. For students who indicated "other" for race/ethnicity, results showed marginal intervention effects ( $b = .46$ ,  $SE = .26$ ,  $\beta = .36$ ,  $p = .078$ , 95% CI [-.05, .97],  $ES = .36$ ), explaining approximately 19% of the total variation in other students' post-course confidence ( $R^2 = .185$ ,  $p > .05$ ), indicating that students in the treatment group overall had a trend of 0.46-unit higher level of post-course confidence over their control group counterparts, with a small to medium effect size. We did not find similar significant effects in students of other racial/ethnic backgrounds.

#### *D. Qualitative Response Codes*

For our analysis of post-course surveys, discussed in III.C above, we report additional methods here. For open-ended responses, dichotomous present/absent, mostly nonexclusive codes were derived for each item after data collection. Where the same question was asked in both data collection periods, the same codes were used with allowances for additions at post-1L to capture new responses. Some items had overarching categories with codes embedded (e.g., a skills category included classroom, professional, and general). While basic, this system worked for what were often brief (a few sentences to single word), targeted responses from the participants. Two coders had an overall 94% interrater agreement on a random 10% sample of items for all codes. Disagreements were discussed and the coding system refined to create the final coding system reported here.

Here we report raw frequencies of qualitative response codes. The following tables are sorted by national treatment column, and codes are included on the tables if they were found in at least 10% of the respondents in either the national treatment or UArizona groups.



**Immediately Post-course Survey**

**Table S7**—*What has been the most satisfying about your experience in the program?*

	National Control, n=55	National Treatment, n=44	UArizona, n=27
prepare-law school	13%	43%	58%
prepare-profession	4%	21%	19%
program/course	4%	10%	4%
skill-general	25%	7%	0%
skill-reading	4%	7%	23%

**Table S8**—*What has been the most disappointing about your experience in the program?*

	National Control, n=55	National Treatment, n=44	UArizona, n=27
class-content	40%	23%	4%
little/no time	11%	18%	15%
class-feedback	5%	16%	15%
timing	2%	16%	37%
nothing	9%	16%	26%
class-interaction	5%	7%	11%

**Table S9**—*What one change would you like to implement that would improve the educational experience in this program?*

	National Control, n=56	National Treatment, n=41	UArizona, n=26
more material	32%	20%	12%
interactions	2%	20%	0%
different material	38%	17%	23%
feedback	4%	17%	23%
nothing	4%	15%	8%
timing	5%	12%	31%

**Post-1L Fall Semester Survey****Table S10**—*What has been the most satisfying about your experience in the program?*

	National Control, n=55	National Treatment, n=41	UArizona, n=17
prepare-law school	25%	37%	29%
skill-reading	2%	27%	24%
skill-general	16%	20%	24%
prepare-profession	13%	15%	6%
skill-writing	16%	12%	18%

**Table S11**—*What has been the most disappointing about your experience in the program?*

	National Control, n=54	National Treatment, n=40	UArizona, n=16
nothing	17%	20%	6%
class-feedback	9%	18%	6%
prog-LS mismatch	19%	18%	13%

**Table S12**—*What one change would you like to implement that would improve the educational experience in this program?*

	National Control, n=56	National Treatment, n=40	UArizona, n=17
more material	20%	30%	18%
different material	25%	23%	24%
feedback	13%	20%	12%
interactions	7%	10%	6%
nothing	5%	10%	0%

**Table S13**—*What one thing should not be changed about the educational experience in this program?*

	National Control, n=53	National Treatment, n=37	UArizona, n=16
general	25%	27%	31%
videos	4%	14%	13%
workload	8%	11%	0%
other people	11%	11%	19%
misread	2%	11%	6%
readings	2%	8%	19%
writings	11%	8%	19%