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ARE SCHOLARS BETTER TEACHERS?

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Does scholarship improve teaching? Are widely cited law scholars also more highly regarded teachers? Or does scholarship detract from class preparation and planning so that those who are not major scholars are on balance better teachers? In this article, we present data from a small-scale study of student course evaluations at three law schools—Boston University, the University of Chicago, and the University of Colorado. In these data we see solid evidence of a substantial positive correlation between a professor's number of scholarly citations and his or her student course evaluations. Indeed, the odds that a highly cited scholar will have above average instructor ratings are about 1.9 times as high as the odds that an infrequently cited scholar will have above average instructor ratings. Furthermore, the odds that an infrequently cited scholar will have instructor ratings in the bottom 25% for large and medium-sized courses are 2.9 times the odds of a highly cited scholar having a similarly poor rating.

If these three law schools are any indication, good law teaching and legal scholarship tend to be found together, rather than apart. These results are strong enough to suggest that a much larger study should be undertaken to assess the relationship between scholarship and teaching in American law schools.

I. THE MIXED EVIDENCE FOR A CORRELATION BETWEEN TEACHING AND SCHOLARSHIP IN AMERICAN UNIVERSITIES

Whether teaching and scholarship are at war with each other in American universities has been frequently studied, but the results are inconclusive. Particularly when researchers ask the *opinions* of faculty and students about faculty commitments to scholarship and

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teaching, there is some evidence that teaching and scholarship detract from each other.¹ Thus, one can point to some weak evidence for the prevailing orthodoxy among the uninformed: that there is a conflict between teaching and scholarship. Why this might be so is obvious:

- (1) Scholarship takes time that might be spent preparing for class;²
- (2) We tend to do better at those things that we care about more—if we care more about teaching, we might do it better; and
- (3) When we emphasize scholarship in faculty hiring and retention, we might choose worse teachers.

All this is plausible, but is it true?

The majority of the studies that have looked for actual evidence of this hypothesized conflict, comparing scholarship measures with teaching evaluations, have found the opposite: a small positive correlation between teaching and scholarship.³ They conclude that teaching and scholarship appear to be complementary. Why this might be so is also obvious:

- (1) People who are smart do many things well; people who aren't as smart do many things less well;
- (2) People who work hard at one thing tend to work hard at another;
- (3) Scholarship is one form of expression of interest in a field, thus scholars might be more interested in the subject matter; and
- (4) Scholarship keeps one fresh, learning, and up-to-date.⁴

It is this last argument that seems the most important to us. When you graduate from school or leave practice, you have a store of human capital that you draw down over your career. If you don't write scholarship, it is less likely that you will read enough in new literatures to add to your human capital. We find some admittedly

1. See Mary Frank Fox, *Research, Teaching, and Publication Productivity: Mutuality Versus Competition in Academia*, 65 SOC. EDUC. 293 (1992).

2. See *id.* at 301 (noting that investments of time in scholarship compete with investments of time in teaching).

3. The leading literature reviews are JOHN M. BRAXTON, *CONTRASTING PERSPECTIVES ON THE RELATIONSHIP BETWEEN TEACHING AND RESEARCH IN FACULTY TEACHING AND RESEARCH: IS THERE A CONFLICT?* (John M. Braxton ed. 1996), and Kenneth A. Feldman, *Research Productivity and Scholarly Accomplishment of College Teachers as Related to Their Instructional Effectiveness: A Review and Exploration*, 26 RES. HIGHER EDUC. 227 (1987).

4. See Lawrence R. Jauch, *Relationships of Research and Teaching: Implications for Faculty Evaluation*, 5 RES. HIGHER EDUC. 1 (1976).

weak support for this explanation in our secondary finding that more experienced law professors tend to have lower course evaluations.

In the studies that have compared course evaluations to scholarship, the most frequent scholarship measures used are the number of publications or scholarly citations to published work. Kenneth Feldman, in a 1987 literature review article of studies of American university teaching,⁵ concluded that the average correlation (r) between current productivity and course evaluations was .13.⁶ For productivity over a professor's lifetime, it was .14.⁷ These are very modest correlations, representing only about 2% of the variance in course evaluation scores. In the five studies that Feldman examined that used citation counts, there was no correlation between citation counts and teaching effectiveness ($r=-.002$).⁸

In a 1983 study, John Centra found moderately strong correlations between the number of published articles and ratings of student effectiveness for social science professors ($r=.23-.24$, depending on years of experience).⁹ For professional courses, he found a smaller correlation ($r=.17$ for 7-12 years of experience, and an insignificant $r=.13$ for 13 or more years of experience).¹⁰ For humanities and natural science courses for the same number of years of experience, he found no correlation.¹¹

In two important respects, then, one might expect to find no positive relationship between teaching evaluations and scholarship in our study. First, we used the scholarship measure that has not been shown to correlate with teaching evaluations—scholarly citations. Second, we are studying law schools, which as professional schools might be thought to show little correlation.

II. METHODOLOGY

In our study, we compared two groups of law professors at three schools—those eight professors at each school who are the most cited (controlling for their years in law teaching), compared with those eight who are least cited (controlling for their years in law teaching). We then examined whether the instructor ratings on their course eval-

5. See Feldman, *supra* note 3, at 230 tbl.1.

6. See *id.* at 239.

7. See *id.*

8. See *id.* at 240.

9. See John A. Centra, *Research Productivity and Teaching Effectiveness*, 18 RES. HIGHER EDUC. 379, 386 tbl.2 (1983).

10. See *id.*

11. See *id.*

uations were higher for the heavily cited group than for the lightly cited group. We did the analyses several ways—controlling in some models for years of law teaching, the year of the term in which the course was offered, the school, and the number of responses.

The eight heavily cited professors and the eight lightly cited professors on each school were taken from current research by Professors Theodore Eisenberg and Martin T. Wells of Cornell University.¹² Eisenberg counted citations in Westlaw databases as of 1996 for several dozen top law schools. He divided each professor's citation count by the mean number of citations of professors who have been in law teaching for the same number of years. Because citation counts grow roughly linearly up to 15 years and then are essentially flat for professors who have been teaching longer than 15 years, Eisenberg's adjusted citation counts are a good indication of a professor's citations compared to other professors at top law schools with similar longevity in teaching. Restricting our study to those who had taught at least 8 years in 1996, we selected the eight most- and the eight least-cited members of each faculty, adjusted by the average citation count for professors in teaching the same number of years.

We picked teachers at the scholarship extremes for two reasons. First, because scholarly influence is so difficult to measure and because citation counts are such an imperfect indicator of scholarly influence, we wanted to be relatively secure that our groups of major scholars and less major scholars would be different enough on their scholarship for us to fairly draw conclusions about them. Including all professors would give us more statistical information, but it would also put more pressure on any productivity measure we might choose. Second, we believed that the initial question for study was whether there was any substantial relationship between scholarship and law teaching. Finding fairly strong evidence that there is, it would now make sense to examine the phenomenon in other schools and with broader sets of professors to be able to answer the question more definitively.

To examine teaching effectiveness, we used the one question from each form that asked the student to rate the instructor or the teaching performance. We recognize that student course evaluations are imperfect measures of teaching effectiveness, but they are the best avail-

12. Theodore Eisenberg & Martin T. Wells, *Ranking and Explaining the Scholarly Impact of Law Schools*, 27 J. LEGAL STUD. (forthcoming June 1998).

able.¹³ We requested course evaluations from a large number of law schools. Four supplied evaluations, but one of them supplied only one term, which did not have enough of its most-cited faculty teaching to be usable.¹⁴ Thus, we used evaluations from three law schools: Boston University (fall 1992–spring 1993 terms), the University of Chicago (spring 1994–winter 1997 terms), and the University of Colorado (fall 1994–spring 1997 terms). After selecting the 16 professors at each school for study, we standardized the instructor ratings so that each school would be on the same scale¹⁵ and could be analyzed together. Two of the 48 professors did not teach any courses during the terms used and were therefore excluded.

III. RESULTS

Highly cited scholars are perceived by students as better teachers. In Chart 1, we compare the mean standardized course evaluation scores for highly cited professors to those for less highly cited professors. After standardization, the mean score is approximately zero. As you can see, less-cited professors have instructor ratings about .4 standard deviations lower than the more-cited ones.

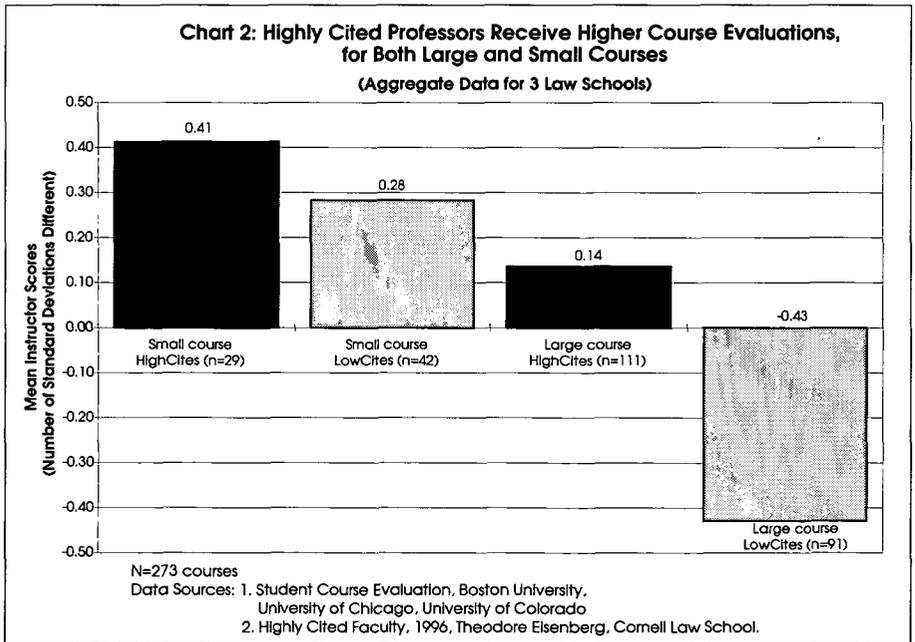
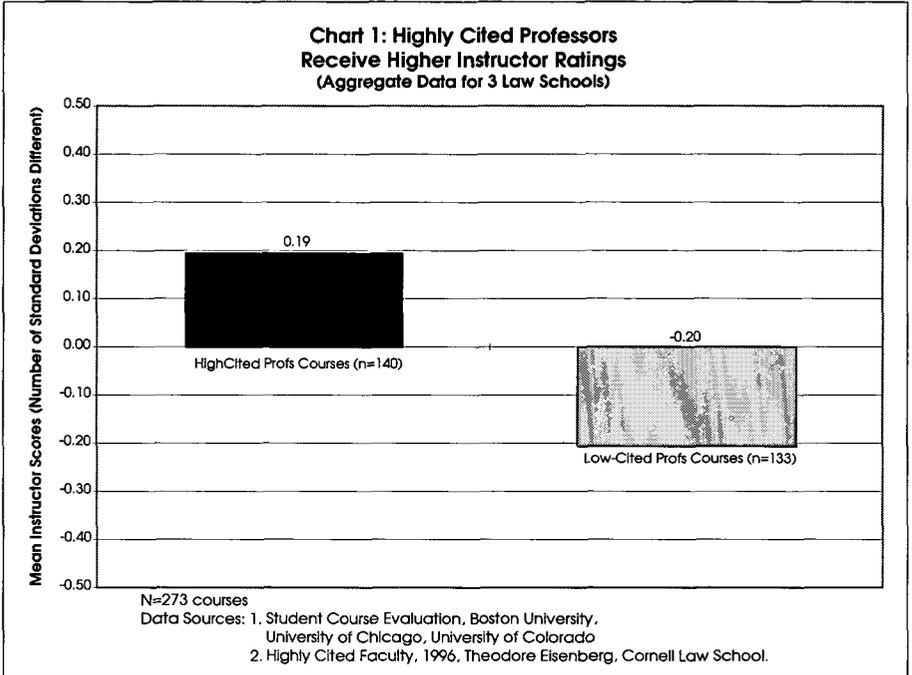
Because smaller classes generally receive higher course evaluations, in Chart 2 we break down scores for those classes in which we have fewer than 15 responses and those with 15 or more responses.¹⁶ Here we see that the difference for large- and medium-sized courses (those with 15 or more responses) is larger still—about .57 standard deviations.

13. One study used whether someone had ever received a teaching award, on the often erroneous assumption that teaching awards reflect the opinions of students, colleagues, and administrators, while course evaluations reflect only student opinion. See Michael A. Faia, *Teaching and Research: Rapport or Mesalliance*, 4 RES. HIGHER EDUC. 235 (1976).

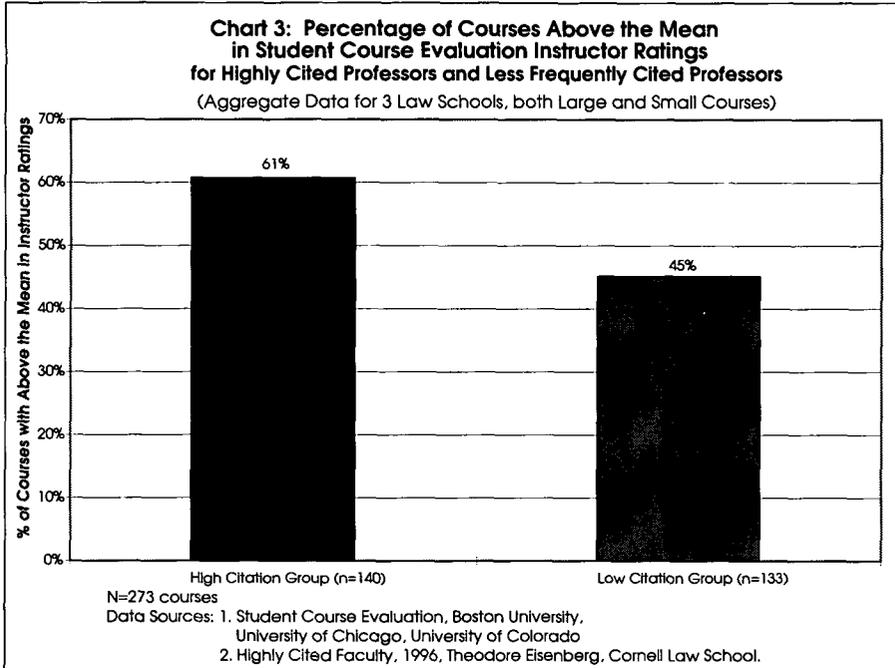
14. Only one of its eight most-cited faculty taught in the term provided (he had a high score, if you're curious), thus making comparisons between "groups" impossible.

15. Further, we assigned numbers to the average grade given to instructors in the Colorado summaries: A = 4.0, A- = 3.666667, B+ = 3.333333, B = 3.0, etc. These numbers were then standardized.

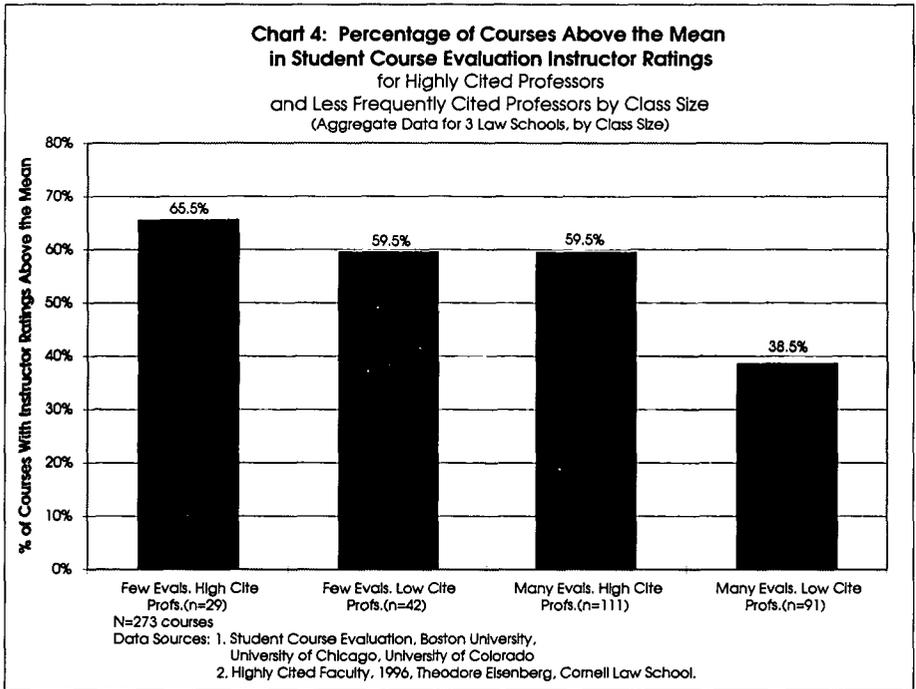
16. For two quarters at Chicago, the number of responses were not reported. For most classes, it was clear whether 15 responses would be expected or not (required first year courses, traditionally very large electives, etc.). In the few cases of genuine doubt, we used the number of responses that the course received the other times that the instructor taught the course, or another instructor taught the course. In a few cases, we made an educated guess. The analyses in this paper were done both with and without the imputed data and the results were extremely similar.



Perhaps a more intuitive way to understand the difference is to see how many courses would be above the mean for all courses. In Chart 3, we show that 61% of the courses taught by highly cited professors receive above average course evaluations, while only 45% of the courses taught by less frequently cited professors receive above average course evaluations.



When one separates out the small classes from the rest, the pattern is once again more dramatic. For large and medium courses, 59.5% of those taught by major scholars are above average, while only 38.5% of those taught by infrequently cited professors are above the mean. Indeed, for the less frequently cited professors, their performance on this measure, even for small classes, reaches only the level of the more-cited scholars' performance in large classes. To state it another way, at these three schools major scholars teach more students and more large classes, yet they still get higher course evaluations. The course evaluations of the less-cited scholars are slightly inflated because they teach disproportionately small classes and yet their scores still don't equal the averages for the highly cited scholars.



One way of expressing these results is in relative odds. If a professor is in the high-citation group, a course he teaches has a 1.9 times greater odds¹⁷ of being in the top half in instructor ratings than a course taught by an infrequently cited professor. If one controls for years in law teaching, the year the course was taught, and the law school, the high-citation group has a 1.9 times greater odds¹⁸ of being above average than the low-citation group (excluding courses with fewer than 15 responses). This is a strong relationship.

Conversely, if a professor is in the low-citation group, a course he teaches has a 2.9 times greater odds¹⁹ of being in the bottom 25% in instructor ratings than a course taught by a highly cited professor, where there are at least 15 responses on the course evaluations. If one controls for years in law teaching, the year the course was taught, and the law school, the low-citation group still has a 2.5 times greater

17. With a constant in a logistic regression model, the model significance is .0097.

18. The model significance is .0006.

19. With a constant in a logistic regression model, the model significance is .0011.

odds²⁰ of being in the bottom 25% than the odds for the high-citation group. This is a very strong relationship.

Next we used multiple linear regression to predict the standardized instructor ratings. Using the year of the course and the schools as controls, the significant predictors of instructor ratings are years in law teaching ($r=-.25$), whether there are at least 15 responses ($r=-.25$), and whether the professor is highly cited ($r=.16$). The multiple correlation coefficient is .38 and the variance explained by the model is 15%.²¹ The coefficient for a model with just the high/low citation variable is .20.²² If the classes with fewer than 15 responses are excluded, the coefficient is .19.²³

These results show a moderate effect for being a highly cited professor on course instructor ratings. Interestingly, the number of responses was a stronger predictor, as was years in law teaching. This seems to fit the earlier hypothesis about the potential loss of relevant human capital to draw on as the years pass, if it is not replenished by scholarship, but it is also consistent with a simpler hypothesis that people who are closer in age to students should be able to communicate with them better. In any event, even after controlling for years in law teaching, the moderate relationship between high citations and course evaluations holds.

Of course, even if these data are reliable, they don't show that an emphasis on scholarship in hiring and retention necessarily promotes teaching. If teaching were the sole goal of American law schools, one would expect to see different cultures for instruction and different people hired. But among those hired and retained, major scholars appear to be better teachers. Not only is the supposed trade-off not present in this data, but the opposite relationship appears: in these data, one can predict who is going to get above average or very poor course evaluations based on scholarly citations.

20. The model significance is .0014 (again, this model is for those courses with at least 15 responses).

21. The model significance is <.00005.

22. The model significance is .0009.

23. The model significance is <.00005.

TABLE 1: LINEAR REGRESSION ANALYSIS

MODEL 1.1: PREDICTING THE INSTRUCTOR RATING FOR HIGH AND LOW CITATION PROFESSORS, CONTROLLING FOR YEARS IN LAW TEACHING, YEAR OF COURSE, SCHOOLS, AND RESPONSE NUMBERS

Multiple R .38494
 R Square .14818
 Standard Error .92985

F = 7.71222 Signif F = <.00005

<i>Variable</i>	<i>B</i>	<i>Beta</i>	<i>T</i>	<i>Sig T</i>
Hi Cite Prof.	.327317	.164511	2.728	.0068
15 Responses	-.565562	-.249472	-4.296	.0000
Z years teach	-.245866	-.246775	-4.054	.0001
School 1	.279332	.109476	1.185	.2372
School 2	.043745	.020736	.340	.7340
Z course yr.	.006111	.006134	.070	.9444
(Constant)	.183855		1.351	.1780

MODEL 2.1: FOR CLASSES WITH 15 OR MORE RESPONSES, PREDICTING THE INSTRUCTOR RATING FOR HIGH AND LOW CITATION PROFESSORS, CONTROLLING FOR YEARS IN LAW TEACHING, YEAR OF COURSE, SCHOOLS

Multiple R .38923
 R Square .15150
 Standard Error .95529

F = 6.99929 Signif F = <.00005

<i>Variable</i>	<i>B</i>	<i>Beta</i>	<i>T</i>	<i>Sig T</i>
Hi Cite Prof.	.392502	.191166	2.747	.0066
Z years teach	-.278919	-.280228	-3.993	.0001
School 1	.261599	.104823	.933	.3517
School 2	.103917	.048721	.678	.4985
Z course yr.	-.000667	-.000663	-.006	.9951
(Constant)	-.436831		-3.208	.0016

IV. CONCLUSION

Are major legal scholars more highly regarded by their students? From our analysis of course evaluation data from three law schools, the tentative answer appears to be "Yes." If one looks at the courses large enough to have at least 15 student evaluation responses, we see that the odds of being in the top half among instructor ratings is 1.9 times higher for heavily cited scholars than it is for infrequently cited scholars. As for predicting whose instructor ratings might be in the bottom 25% of medium and large courses, the odds that those with low numbers of citations to their scholarly work will be in the bottom

25% in instructor ratings are 2.9 times higher. On the other hand, citations do not do as well predicting the precise level of the mean instructor ratings. In various models, the coefficients between being a highly cited scholar and one's course evaluations run from .16 to .20—moderate, meaningful, and statistically significant, but not large—only slightly higher than the coefficients in one earlier study of professional schools.²⁴

I believe that the data are perhaps more successful at rejecting the idea that teaching and research are in conflict than with establishing that they are solidly correlated. As John Centra noted about research on university teaching in general, "The lack of consistent negative correlations between research productivity and teacher ratings in this and other studies indicates that performance as a scholar or researcher does not significantly detract from performance as a teacher."²⁵ Although one study of three law schools is not enough to establish the positive link between scholarship and teaching, we would be extremely surprised if there is a significant negative correlation that somehow doesn't appear in our data.

This study leaves us with other mysteries. First, are the results really true? Can they be repeated on larger samples of schools, broader segments of the faculty, and different measures of scholarship? Boston University, the University of Colorado, and the University of Chicago all have a substantial number of major scholars on their faculties. Perhaps the relationship between scholarship and teaching is different on more typical faculties. One recent study found that the size and type of institution did affect the correlation between scholarship and teaching.²⁶ Second, if the results are valid and reliable, why would we find this pattern? Why are scholars better teachers, perhaps even despite investing less time in class preparation?

The answers to these questions must await another study and another day. The logical result of any empirical study is always at least one more. But the next time we hear the usual nonsense about the inconsistency of legal scholarship and teaching, we'll challenge that assumption as not warranted by the data.

24. See Centra, *supra* note 9, at 386 tbl.2.

25. *Id.* at 388.

26. See Thomas C. Noser et al., *Research Productivity and Perceived Teacher Effectiveness: A Survey of Economics Faculty*, 3 RES. HIGHER EDUC. 299 (1996).

