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Suggestions on How to Conduct Empirical Research: A Behind-the-Scenes View

By Robin A. Boyle and Joanne Ingham

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The conference theme of empirical research at the 2006 Association of American Law Schools Annual Meeting, held in Washington, D.C., indicated an interest on the part of doctrinal and skills professors to conduct their own studies. The conference title, *Empirical Scholarship: What Should We Study and How Should We Study It?*, along with the plentiful workshops on the topic, evidenced the acceptance in the academe of empiricism. As a researcher noted, "Empirical legal scholarship . . . is arguably the next big thing in legal intellectual thought."³

Assisting legal writing professors with their growing interest in conducting empirical studies, the authors presented at the 2006 biennial Legal Writing Institute

conference held in Atlanta, Ga. The subject matter of our workshop is described below. What follows is a step-by-step approach for planning a research study in a classroom. At the outset, we consider "empirical research" to be research that involves objectivity of the researcher, clearly stated goals from the start of the research project, a procedure for collecting data, a statistical measure of the data collected, and process for analyzing that information.

Step One—Identify the Research Question or Hypothesis

Just as research memoranda and appellate briefs begin with a single-sentence Question Presented, so should a research study. A research question of interest to you, or to your institution, may evolve from observing student performance in class. Perhaps a majority of students are struggling with understanding a critical concept or mastering a skill. Maybe a new instructional approach has produced what you think are strikingly dynamic results. Often these experiences, or reading about colleagues' experiences or research, will prompt a research question of interest to you. It is extremely difficult to collect data first and then try to figure out the research question later.

When your idea is formulated, you should be able to explain it clearly to others in a sentence or two. Will your dean understand your research question? Would the faculty understand the question if you were presenting a workshop on the topic? If you struggle to explain your study, then it may not be sufficiently focused to move forward. A focused question for a classroom study was this: "When compared with the traditional method of teaching legal research, what is the relative effectiveness of [the experimental material]?"⁴

¹ See Robin A. Boyle, Karen Russo & Rose Frances Lefkowitz, *Presenting a New Instructional Tool for Teaching Law-Related Courses: A Contract Activity Package for Motivated and Independent Learners*, 38 Gonz. L. Rev. 1 (2002–2003); Robin A. Boyle & Lynne Dolle, *Providing Structure to Law Students—Introducing the Programmed Learning Sequence as an Instructional Tool*, 8 Legal Writing 59 (2002); Robin A. Boyle & Rita Dunn, *Teaching Law Students Through Individual Learning Styles*, 62 Alb. L. Rev. 213 (1998).

² See Joanne Ingham & Robin A. Boyle, *Generation X in Law School: How These Law Students Are Different from Those Who Teach Them*, 56 J. Legal Educ. (forthcoming 2006).

³ Tracey E. George, *An Empirical Study of Empirical Legal Scholarship: The Top Law Schools*, 81 Ind. L.J. 141, 141 (2006).

⁴ Boyle, Russo & Lefkowitz, *supra* note 1, at 15.

“Just as research memoranda and appellate briefs begin with a single-sentence Question Presented, so should a research study.”

Step Two—Explain the Rationale

There needs to be a justifiable reason why your research is being conducted. After all, conducting a study for the heck of it will likely result in an unfocused and, thus, useless collection of data. Ask yourself whether there is a purpose to the study.

Perform a background literature search to understand whether your study or other similar studies have already been conducted. Ascertain whether your intended study is worth doing. If not, reconsider the expense of time and energy. However, unlike the prohibition against writing a scholarly article on a topic twice, there is no such prohibition in empirical research. A subsequent study may further confirm the results of a prior study. A study conducted in a different geographic region, or with a different population, may help shed light on findings from prior studies and contribute to a scholarly body of work.

Who will benefit from the study? The study may benefit the students if it pertains to pedagogy. The study may also benefit the institution. If the study contributes to a body of scholarly work, then it may make it easier to garner support for the project. The answer to this question may help you to identify potential funding sources for your study. It could also help you to select a forum for publishing your findings. Understanding who benefits from your study may also help you to plan, in advance, speaking opportunities. For example, the authors presented their findings of learning-style traits of students and faculty before their faculty at colloquia held at their school as well as before audiences at two biennial conferences of the Legal Writing Institute.

Consider conducting a pilot study. Prof. Boyle conducted a pilot study one year before the actual classroom study.⁵ Results from pilot studies are very useful in justifying the research and persuading funding groups to support your efforts. A pilot study helps researchers fine-tune their procedures and modify materials and provides an anticipated

⁵ See *id.* (describing a study for which a pilot had been conducted, yet unreported, one year prior).

outcome for their findings. You will not use the same study population for both the pilot and the actual study, so plan a year in advance to identify different populations for your two studies.

Step Three—Prepare a Formal Proposal

You will need institutional approval for your study; thus, you will need to put your ideas into written form. The approval process varies from institution to institution, but typically includes written support from the department chair, the dean, or the school's Institutional Review Board (IRB).⁶ Information regarding your school's IRB may likely appear on your school's Web page. IRBs review studies that involve human subjects and will help you to shape your research protocol. The IRB is charged with making sure that the participants are properly informed and protected from harm—physically, psychologically, or emotionally—and that the personal data you collect will remain confidential.

In writing your formal proposal, you should include your study question (see step one above) describing what you plan to do and why (rationale). Also include how you specifically plan to conduct the study. This may involve research. For example, you may want to research articles on metacognition⁷ if you are studying how students read cases. How were the “think-aloud” studies⁸ conducted? Would you want a similar structure for your study? You may want to refer to any number of excellent books describing research methodology that can guide your planning activities.⁹

⁶ See generally Gregory Mitchell, *Empirical Legal Scholarship as Scientific Dialogue*, 83 N.C. L. Rev. 167 (2004).

⁷ See Mary A. Lundeborg, *Metacognitive Aspects of Reading Comprehension: Studying Understanding in Legal Case Analysis*, 22 Reading Res. Q. 407, 410 (1987); Robin A. Boyle, *Employing Active-Learning Techniques and Metacognition in Law School: Shifting Energy from Professor to Student*, 81 U. Det. Mercy L. Rev. 1, 13–17 (2003).

⁸ See Leah M. Christensen, *Legal Reading and Success in Law School: An Empirical Study*, 30 Seattle U. L. Rev. (forthcoming 2007); Dorothy H. Deegan, *Exploring Individual Differences Among Novices Reading in a Specific Domain: The Case of Law*, 30 Reading Res. Q. 154, 155 (1995).

⁹ See Schuyler W. Huck, William H. Cormier & William G. Bounds Jr., *Reading Statistics and Research* (1974); Thomas D. Cook & Donald T. Campbell, *Quasi-Experimentation: Design and Analysis Issues for Field Settings* (1979).

“Perform a background literature search to understand whether your study or other similar studies have already been conducted.”

“Is your study descriptive, quasi-experimental, or experimental? Your research design will determine the appropriate statistical methods to use.”

Plan ahead for your data collection. Where will you obtain the data and in what form? For example, if you are asking your subjects to complete a hard-copy test, will the answers be quantifiable? Will someone then input the answers (scored, say, in a Likert scale) into a software package loaded onto your office computer? If so, will you be hiring an upper-level student to do the labor-intensive work of inputting numbers into an electronic spreadsheet? Which software package will you use? Who will analyze the data?

Include timelines in your written proposal. You should consider deadlines for obtaining consents from the institution (deans, IRB) and from your study participants (usually consents are in writing and voluntarily given). Include in your planning the amount of time needed for creating and administering pretests and posttests, if there are any; writing and duplicating your study materials; engaging professionals, such as statisticians and graphics artists;¹⁰ introducing the study to your participants; and instructing other professors or teaching assistants who will be scoring tests or lecturing during your study.

Lastly, the study proposal should include how the data will be analyzed. Is your study descriptive, quasi-experimental, or experimental? Your research design will determine the appropriate statistical methods to use. The proposal should also include how the study will be reported and to whom. As an added bonus, when you are ready to prepare a final report or draft an article for publication, the formal proposal serves as the outline for your writing activities.

Step Four—Conduct the Study

With step three in place, you are ready to get started. It is important to circulate your timeline to all involved parties. If you are relying upon other professors or upper-level students to help in your study, now is the time to let them know when they will be needed and what is expected of them.

Your study materials, including pretests and posttests, need to be created and duplicated. If you need supplies, such as number two pencils, this is the time to order and store them. Organize all of your materials and communicate with all those involved in the project.

In step four, provide written consent forms to your study participants. This is the time to create a PowerPoint that explains your study and show it to the participants. The effectiveness of your presentation to the students has a direct impact on their willingness to fully participate. Communicate to students that they do not have to participate and that they will not be harmed academically if they do not participate.

There is no room for error at this stage. Your study has begun!

Step Five—Collect the Data

Step three should have helped you plan for the data collection. This is the time to collect answers to test questions. Perhaps your subjects are reading cases aloud with their responses being scored by prepared observers; this is the stage when you collect those responses. Meticulous attention to detail is essential. You may want to, or need to, code participants' names for confidentiality. Label materials for date, time, class, and classroom to prepare for the data entry stage. Be very clear in your labeling as to which data you have and from where it came.

Having collected the data, it may need to be inputted into an electronic spreadsheet (Excel or SPSS, for example). Your computer skill level and the amount of data you have to enter will determine if you need assistance with this step. You should be prepared to back up and to store the collected data in a secure environment for several years, or as suggested otherwise by your IRB. Data can be stored in a password-protected file on a law school computer and backed up by the institution, saved on a CD and stored safely off-campus, etc.

¹⁰ See, e.g., Boyle & Dolle, *supra* note 1, at app. B (employing a graphics artist to develop pictures for the study materials).

Step Six—Analyze and Report Findings

How are you going to determine your outcomes? Consider which analyses you will be conducting. Who will run the statistics and prepare tables and graphs? Statisticians are useful for analyzing data and preparing tables and graphs. If your law school is part of a larger university, there are likely to be statisticians teaching in the psychology department or education department who could help you analyze the data. Often professors from other disciplines would be happy to receive acknowledgment of their contributions by listing them as co-authors on your published findings. The authors have sought help from both university statisticians and statisticians whom we have hired from the outside. Often the for-hire statisticians charge an hourly rate.

You and your statistician may come to the unfortunate conclusion that the study did not work well. If results are indicating that there was a flaw in the study, it may make sense to discontinue the data collection and analysis. Alternatively, if your statistician reports the successful execution of the study, the collection of appropriate data, and the determination of useful findings, such as “statistical significance,”¹¹ then congratulations. You are ready to move on and plan for step seven—how your findings will be reported.

Step Seven—Share the Results

The ultimate moment in your study is determining what you have learned; after all, this is the point of the study. Determining the relevance of the findings is the next inquiry. The findings may be relevant to only a few persons, such as your students; the deans at your school; the faculty at your school; or perhaps the larger community of scholars in your field.

Often it is appropriate to share the results with the participants. The findings may provide useful information or feedback for their personal benefit.

Students have typically been very interested in finding out the results of a study. In a study conducted at three different law schools with faculty and students, all of the students involved received feedback on the study results and how those results could benefit their study strategies. Seminars were presented to the faculty at all three law schools to report back on what was learned at each site and how the findings could be generalized to legal education. Consider speaking engagements at faculty colloquia and regional and national conferences, and to law firms and other interested industries. Sharing the results can also include publication in newsletters in your field as well as in legal periodicals.

Finally, help yourselves and your colleagues by making recommendations for future research. What questions were generated by your research and need further study? What would you have done differently? This discussion may also provide the basis for your own continued research activities. Very often, finding answers to one research question generates a new set of questions ripe for new research.

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Another Perspective

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¹¹ See, e.g., Boyle, Russo & Lefkowitz, *supra* note 1, at 16–17 (describing the study’s findings as having “achieved statistical significance at the $p < .001$ level” meaning that a “result of this magnitude might occur by chance approximately one in a thousand times”).