

Reverse Research Design: Research Design in the Undergraduate Classroom

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ABSTRACT

Teaching research design is a core component of a political science curriculum. In our pedagogy, we often do two things separately: expecting students to (1) read and digest the work of established scholars, and (2) explore their own interests in the form of a research design or research paper. In a reverse research design, I bridge these two components with a pedagogical tool. I use a published book or article relevant to the course and students retrace the published author's process, placing themselves in the author's shoes. Rewinding some years, students imagine that they are this author writing a grant proposal to conduct the (now-completed) study. This helps students to work through the steps of research design, putting aside until later the more intimidating hurdle of articulating their own research question and project. This article explains reverse research design and describes the teaching resources and methods for implementation.


Teaching research design is a core component of a political science curriculum. Yet, for many students, drafting their own research design for the first time is a daunting task. In our pedagogy, we often do two things separately: expecting students to (1) read and digest the polished work of established scholars, and (2) explore their own interests, expressed in the form of a research design or paper. In an approach that I call a “reverse research design,” I bridge these two components of the political science classroom with a pedagogical tool. It links these components by using a published book or article relevant to the course and asking students to retrace the published author's process. They do so by placing themselves in the author's shoes: they rewind some years and imagine that they are this author at the very beginning of research, writing a grant proposal to conduct the (now-completed) study. This exercise helps students work through the steps of research design without the formidable hurdle of articulating their own clearly formulated research question and project. The exercise also teaches them how to read political science, helping them to identify and evaluate an author's method of analysis.

This article explains reverse research design and describes the teaching resources and methods for implementing it. I begin with an overview of existing data on the challenge of teaching research design, as well as pedagogical work on how to go about it. I then present a three-step guide on how to teach research design in the classroom, including the reverse-research component. The illustration uses the thematic example of a political scientist's work in

the field of social movements. However, the assignment is designed to be implemented using any social science subject matter and by any instructor who wants to teach research design along with the substantive exploration of a field of study. The assignment originally was designed for a writing seminar at a research university (i.e., Cornell University) but has since been applied with success at various universities and liberal arts colleges. It is suitable for instruction in any mid- to upper-level undergraduate course, and it can be used for research design involving qualitative and quantitative methods. If a class has many students, it is possible to assign it in groups—that is, small groups work together to retrace an existing text's research design.

TEACHING RESEARCH DESIGN

In 2010, the American Political Science Association (APSA) Task Force on Political Science in the 21st Century conducted a study on research methods and design in graduate and undergraduate political science programs. It surveyed programs in Finland, the Netherlands, Norway, Sweden, the United Kingdom, Australia, Canada, and the United States and found that programs in the three latter countries were behind in requiring research-related courses for graduation during the undergraduate experience. In the United States, only “24% of programs require research methods, and 17% require a thesis or research project” (Parker 2010). APSA found that the diverse liberal arts BA programs (emphasizing breadth over depth) common in the United States are the least likely to require research courses (Parker 2010). As is true in my current department at Occidental College, teaching independent research in political science is also lacking at small liberal arts colleges, despite often having more readily available

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funds and support for student research-related activities.¹ Somewhat paradoxically, however, this pattern is most pronounced at US-based research-focused institutions. Thies and Hogan (2005) conducted a survey of departments identified by APSA as offering an undergraduate curriculum in political science to determine whether research design typically is taught. They found that “undergraduates at PhD institutions are the least likely to be required to take a course in methodology” because these institutions are concerned with the development of graduate-school research projects (Thies and Hogan 2005, 296). Therefore, research design typically is most emphasized in the graduate-level political science curriculum. When it is offered, a study conducted by Baglione (2008) suggested that research design usually is taught to undergraduate students in preliminary political science courses that teach fundamentals of research-paper writing.

Although research methods training is not always required in the political science curriculum, and there appear to be barriers to teaching it, we know that it is productive for our learning objectives in the field²—especially those related to critical analytical analysis, the mastery of inquiry, logical thinking, and comprehension of politics. At a minimum, “a faculty-approved research design shows a level of respect for the students’ intellectual abilities,” which can encourage students to realize independent research projects (Baglione 2008, 598). Another study conducted by Gilbert, Knutson, and Gilbert (2012) experimented with adding a research lab—which would provide students with the tools and resources to effectively construct research designs and carry this

course—one that did the difficult part of “articulating a good question” for them.

There are many creative ways to incorporate research design in political science courses. Most scholars begin by teaching substantive course material, followed by discussion of research design (what I call Step 1), followed by a segment on writing their own research outline/paper (what I call Step 3). I propose making use of the existing material being taught and then reverse tracing its research design (Step 2) before getting to Step 3. Following is a description of these three steps, focusing on Step 2.

THREE-STEP GUIDE TO TEACHING RESEARCH DESIGN

Although all the steps are essential to the successful explanation of research design, I noticed student hesitation around research design if I “throw them in at the deep end” (i.e., Steps 1 and 3 in my outline). Identifying an interesting puzzle, developing an original research question, and outlining a method of analysis is intimidating to most undergraduate students. Thus, I propose adding a reverse research design step (i.e., Step 2) to prepare a foundation for advancing to Step 3. Not only does Step 2 link research-design instruction firmly to the broad thematic objectives of any course (whether or not it is specifically methods focused), it also allows students to write a research design without the distracting anxiety around coming up with the “right” question (i.e., Step 3). Instead, they do all of these steps while engaging with the work of a scholar whom they admire and who speaks to the course’s theme.

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out independently—to the required research methods course for the political science major at Gustavus Adolphus College. This study found that students who took the semester-long lab on designing and conducting research outperformed students in the control group who did not enroll in the lab (Gilbert, Knutson, and Gilbert 2012, 113). In summary, we know that undergraduate research experience is important (Becker 2019), but teaching research design to undergraduates is difficult and we do not do it as much as we should.

One reason for this is the time and difficulty it takes to introduce elements of research design and for students to carry out their own research in the one-semester timeframe focused on a thematic topic. This often entails the time it takes students to develop their own feasible question and the constant writing and rewriting of that question as they attempt (for the first time) to draft a research design worthy of answering it. Whereas seasoned scholars know how to formulate a research question, students often “put the cart before the horse.” My PhD adviser, Peter Katzenstein, often said “we professors can do a lot, but we can’t teach a good research question.” There are many reasons for that, not least of which is that students must be passionate and interested in their own topic of study. However, observing that many students struggle with doing this all at once, I decided to set aside the task of finding that “good question” and have them first do a reverse research design. The way to do this was to ask them simply to work with an existing study already assigned for the

I teach research design only after spending several weeks on the substantive and thematic elements of the course. For example, the course that I use for illustration is my intermediate 200-level Comparative Social Movements course. We spend five weeks on social-movement theory and a midterm exam before turning to a component on case studies and research design. Last year, my first case study (in weeks 6 and 7) was Zepeda-Millán’s (2017) book, *Latino Mass Mobilization: Immigration, Racialization, and Activism*. Students already had the theoretical tools to comprehend the book’s argument and theoretical contribution. I wanted to push them a step further by asking them to also read it for its methodology.

Step 1: Teach Research Design Components and Purpose

I begin with a session on research design (i.e., Step 1); surely this is similar to what many of my colleagues who teach research design already do. I review core components, explaining what to expect to find in a research proposal (e.g., question, puzzle, argument, data, methods, feasibility, and significance). I use the analogy of research design as a fishing license,³ which is how to convince a funder or a professor that one knows the ocean floor (i.e., the existing literature) and possesses the boat and the tools (i.e., method, skills, and feasibility) so that when embarking on the fishing trip, one is likely to catch some fish. There are many good ways to accomplish Step 1. McCarty (2019, 1), for example, experimented with a framework for teaching research design using

the metaphor of a “Law & Order” murder investigation and trial. Alternatively, Warburton and Madge (1994) provided strategies of teaching research design through a “snakes and ladders” board game that simulates the steps that arise when constructing a research design. However, from there, I do not ask students to come up with their question and write one of their own (i.e., Step 3). Before we delve into that step, I want them to understand the core aspects of research design by first looking at examples of polished work and then retracing the steps to design what the scholar who wrote that paper imagined at the earliest stage of the research project. Therefore, instead of moving to Step 3, we go back to our class reading(s) (in this case, Zepeda-Millán’s book) to carry out the focus of this article: the reverse research design (i.e., Step 2).

Working with Zepeda-Millán’s book, the class (individually or in small groups, depending on the number of students) identifies the strategies that the author used to create a finished work. In a class that uses multiple case studies early in the semester, students also may be invited to work with any case-study text listed on the syllabus. Students relate that working with a book with which they have become familiar in the course setting relieves some of their anxiety about designing a project from scratch. An added bonus is that they seem to have fun with it by using their creative license to explore the author’s profile, imagining what their dreadful graduate-school or professorial life might have been like when embarking on a major research project. Next is Step 2.

Step 2: The Reverse Research Design Assignment

For this assignment, you must place yourself in the author’s shoes. Rewind a few years and imagine that you are this author at the very beginning of the research-design stage. You are writing to a foundation to ask them to fund the research that will lead to this book/article. This foundation asks you to include a five-page (double-spaced) research design/proposal that explains your envisioned project. In your research design, you should outline—in your own words—the plan of the research that will lead to the published book/article. You are allowed some creative license—it is obvious that your imagined steps in producing this book/article will not be entirely those of the actual author. What is important is

collect it? (Where do you need to go?) What type of methods will you use to collect (and later analyze) the data? Will you interview the actors? (If so, who are the actors and how will you identify them?) Will you read primary sources in an archive? Will you collect quantitative data to analyze in a statistical regression?

- *Feasibility.* What qualities do you have as a researcher? What type of training should you have (e.g., language, education, and research toolkit) to carry out this research? What is your positionality to the object of study? Basically, assure the foundation that you will be able to carry out the research that you propose.
- *Significance.* Go “big picture” here and explain why this project is important, both theoretically and practically. In other words, why should someone (other than your grandparent) give you money to do this work? Why will others want to read it in the future?

This exercise is important not only for thinking through the various stages of the writing process and understanding the assigned reading; it also is useful practice for designing your own research project (i.e., the next assignment) and for future grant applications (e.g., a Fulbright Scholarship).

* * *

Books are especially useful because students think of their appendices as instructional manuals. Indeed, having read one for the first time, a student referred to the appendix as a scholar’s “best-kept secret” in knowing how to read and comprehend a study. Zepeda-Millán’s (2017) book was exceptionally productive in this regard because of the appendix’s powerful statement on positionality. Students found numerous hints in it about the author’s own demographics, his relationship to the movements that he studies, and his critical views on the field’s understanding of “objectivity.” This already enhanced their methodological framework by combining research design with feminist and queer methods. Furthermore, because they pretended to be the author, many students—including first-generation and marginalized students—were able to identify with the scholar and see themselves in his research, which

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that you think through the components of a research design—the first step of any solid research paper. The application requires that you outline the following components of your proposed study:

- *Puzzle, Research Question, and Argument.* What is your thesis question? What inspires you to write this article? (Typically, an empirical and/or theoretical puzzle motivates a question: outline it. This can be informed by existing literature.) What is your argument/thesis statement? In other words, what do you expect to discover?
- *Data Collection and Methodology.* What type of evidence do you need to collect to make your argument? How will you

made the role play of being a “scholar” more transformative. Thus, I especially recommend assigning this exercise using work written by scholars who are themselves underrepresented in the field (cf. Ayoub and Rose 2016). It is an added bonus of the assignment.

After this important exercise, students can advance to Step 3, crafting their own research designs. I remind them that a research design is a blueprint that scholars hope will lead them to a publishable paper on their research sometime in the future. In many cases, scholars also use these designs to obtain funding for their research projects—that is, money from donors to carry out their research. Finally, I note that for this course, students must submit a research design (in four drafts) describing their own

project and their plan for completing it.⁴ The next assignment goes further, including a more substantial literature review. By already completing Step 2, students are familiar with shaping a question and what is needed to answer it. Nevertheless, I supply them with mock questions that are common in any particular field, insisting that these are only guiding examples and not exhaustive of the types of questions asked. I find that this does not stifle their creativity, and it helps with the elusive step of writing “your first research question.” The Step 3 assignment is an example.

Step 3: The Original Research Design Assignment

Proceed as follows: articulate a research question, review the relevant secondary literature (that you have read in this course) informing that question, and map out how you plan to answer your question. This must describe the primary data that you will collect. This assignment consists of multiple drafts, starting with the articulation of a research question and puzzle in Draft #1. These drafts and what the steps entail will be explained in class.

Original Research Design (10–12 pages), Fulbright Version (2 pages), and Presentation

Draft #1: One-page proposal including puzzle and question

Draft #2: Three-page outline including puzzle, question, argument, data, and method

Draft #3: Five-page outline including the components of Drafts #1 and #2 plus literature review

Draft #4: Eight-page draft expanding on all of the previous components

Presentation: 10-Minute presentation in our Comparative Social Movements conference

Paper: Final Version + Short (Fulbright) Version

Potential questions include (but are not limited to) the following:

- How and when did Movement X emerge in Country X? What key factors influenced the mobilization of people in that country?

There might be other variations of a similar question, for example:

- Why did Movement X emerge in Country A but not in Country B? What factors influenced the mobilization in one case but not in the other?

Or:

- Why did Movement X but not Movement Y emerge in Country A? What factors influenced the mobilization of one movement but not the other?
- What are the goals of Movement X in Country A? How do current movement goals compare to those of the same movement from an earlier time?

A similar but different question might be:

- What are the goals of Movement X in Country A, and how do they differ from the same movement’s goals in Country B? Why have organizations focused on these specific goals in each country?

- Who participates in Movement X? Why is it Demographic X and not Demographic Y?

You need to start thinking about this question early and meet with me to discuss it during my office hours. The website, Mobilizing Ideas (www.mobilizingideas.wordpress.com), is a good resource for inspiration on cutting-edge research questions in comparative social-movement research.

Research Design: 10–12 Pages Conforming to All Relevant Guidelines Concerning Written Work Stated in the Course Syllabus

In this assignment, you will prepare a research design. A research design lays out a plan for how you will conduct a research project, which you actually may want to carry out later in your academic career (i.e., consider it the basis for a grant application). The design lays out (1) a question, (2) a preliminary thesis statement, and (3) a strategy of how you will collect evidence to support your ideas. Required sections of a research design (see previous assignment) are as follows:

- *Puzzle, Research Question, and Argument.* Same as in the previous Step 2 assignment.
- *Short Literature Review.* Your question should be framed in the relevant literature (e.g., frames, political opportunities, resource mobilization, and network ties). What would scholars expect you to find based on previous literature? Summarize your sources (many of these are from the syllabus, and you will have additional literature on your particular case), giving particular attention to how they relate to one another and to your question.
- *Data Collection and Methodology.* Same as in the previous Step 2 assignment, followed by: What type of primary sources will you use as evidence for your argument? Primary sources might include organizational mission statements, court decisions, and analysis of rival movements’ websites. Potential primary sources include archives in various university libraries and online archives at a domestic or international organization.
- *Feasibility.* Same as in the previous Step 2 assignment.
- *Significance.* Same as in the previous Step 2 assignment.

Presentation

Your presentation should demonstrate each component of your research design, should be 10 minutes long (no longer), and should include a PowerPoint with one slide for each of the previous bulleted components.

A Two-Page Version of Your Presentation for a Fulbright Scholarship

The Fulbright Version includes the same components in a shorter form, following these Fulbright “Statement of Grant Purpose” guidelines (points will be deducted for any deviations, including font and margins): “This two-page document outlines the *Who, What, When, Where, Why, and How* of what you are proposing for your Fulbright year. If you are pursuing a research project, developing a strong, feasible, and compelling project is the most important aspect of a successful Fulbright application. The first step is to familiarize yourself with the program summary for your

host country [we will also count the United States] ... In this case, applicants should focus on demonstrating the reasons for pursuing the proposed program at a particular institution in the host country ... [T]he proposal should indicate a clear commitment to the host country community and a description of how you will

I first developed this assignment. The support and experience I received there in 2012 and at the European University Institute's Max Weber Teaching Training in 2013–2014 shaped my pedagogy for years to come. Since that time, this assignment has been shared and implemented by friends and colleagues who have used it in

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engage with it. Format: single-spaced, 12-point Times New Roman, 1-inch margins.”

CONCLUSION

There are many barriers to effectively teaching research design to undergraduate students. These factors include whether a research methods class is a major requirement, whether students have an econometrics background, and whether there are curriculum requirements that impact the course's flexibility for independent student research (Monogan 2017). I wanted to develop an assignment that could be implemented for courses and students with different types of constraints. The reverse research design is a tool that has been implemented in my intermediate-level courses with much success since 2012. In terms of assessment, there are indicators of its effectiveness. One semester after I arrived and taught the course at Occidental College, the entire department adopted the assignment as a requirement for all 200-level classes. Most important, in several years of course evaluations, students have appreciated the assignment, praising it as foundational training for their later comprehensive thesis writing, grant applications, and reading and comprehending social science. Several students have gone on to top graduate programs and fellowships with a proposal in hand that came out of this early assignment. Despite being a relatively simple exercise, it can make future application and research processes more substantial and achievable for students. In doing so, it accomplishes multiple learning outcomes: teaching a text that is substantively important to the course, introducing the logic of research design, guiding how to read and comprehend social science work, and inspiring students to pursue their own independent inquiry. Students already have an advantage in understanding many of the novel questions that our society and institutions will face. Providing them with the tools to formulate and ask those questions is one of the best ways we, as their professors, can support them.

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NOTES

1. Becker (2019) found that “Institutions that are small, selective, and place an emphasis on the liberal arts also have more students participating in URES [undergraduate research experiences], particularly when compared to comprehensive regional universities” (Becker 2019, 3).
2. Scholars argue that “...the most substantial exposure students get to the rigorous study of politics often comes from the content of an undergraduate research methods course” (Monogan 2017, 549).
3. I thank Peter Katzenstein for this analogy.
4. If four drafts are cumbersome to grade, instructors may opt to reduce them or save one for in-class peer review.

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