

**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 read and digest the work of established scholars, and 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 take a published book or article relevant to the course: students retrace the published author's process, placing themselves in the shoes of the author(s). Rewinding some years, students imagine they are this author writing a grant proposal to conduct the (now completed) study. This helps students work through the steps of research design, putting aside until later the more intimidating hurdle of having to articulate their own research question and project. This essay explains reverse research design, alongside a description of the teaching resources and methods for implementation.

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## Introduction

Teaching research design is a core component of a political science curriculum. Yet, for many students, drafting one's own research design for the first time is a daunting task. In our pedagogy, we often do two things separately, expecting students to read and digest the polished work of established scholars, alongside exploring 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 that links them. It does so by taking a published book or article relevant to the course and asking the students to retrace the published author's process. Students do so by placing themselves in the shoes of the author(s); they rewind some years and imagine 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 having 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.

In what follows, I explain reverse research design, alongside a description of the teaching resources and methods for implementing it. I begin with a short overview of existing data on the challenge of teaching research design, as well as some 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. While the illustration uses the thematic example of a political scientist's work in the field of social movements, the assignment is designed to be implemented using any social science subject matter and for any instructor wishing to teach research design alongside the substantive exploration of a field of study. The assignment was originally designed for a writing seminar at a research university (Cornell University), but has since been applied with success at a variety of 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 or quantitative methods. If the class has many students, it is possible to assign it in groups, i.e. small groups work together to retrace an existing text's research design.

## Teaching Research Design

In 2010, the American Political Science Association's (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. They surveyed programs in Finland, the Netherlands, Norway, Sweden, the United Kingdom, Australia, Canada, and the United States to find that programs in the three latter countries are 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 B.A. 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 funds and support for student research-related activities.<sup>1</sup> Somewhat paradoxically, this situation is even more serious at US-based research-focused institutions, however. Thies and Hogan (2005) conducted surveys of departments identified by APSA as offering an undergraduate curriculum in political science to determine

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whether research design is typically taught. They found that “undergraduates at Ph.D. 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 is usually most emphasized in the graduate level political science curriculum. When it is taught, a study conducted by Baglione (2008) suggests that research design is usually taught to undergraduate students during the preliminary political science courses that teach fundamental research paper writing.

Although research method 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 field<sup>iii</sup>; especially ones 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 et al. (2012) experimented with adding a research lab—providing students with the tools and resources to effectively construct research designs and carry this out independently—to the required research methods course for the political science major at Gustavus Adolphus College. This study found that students that took the semester-long lab on designing and conducting research out-performed the students in the control group that did not enroll in the lab (Gilbert, Knutson, and Gilbert 2012, 113). In sum, we know that undergraduate research experience is important (Becker 2019), but teaching research design to undergraduates is hard and we do not do as much of it as we should.

One reason for this is the time and difficulty it takes to introduce elements of research design and for a student to carry out their own research in the timeframe of one semester focused on a thematic topic (e.g., the Comparative Social Movements course I discuss below). This often has to do with 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. While seasoned scholars know how to formulate a research question, students often put the cart before the horse. My own PhD advisor, 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 that students have to be passionate and interested in their own topic of study. But seeing many students struggle with doing it all at once, I decided to set aside the task of finding that “good question” and have students do a reverse research design first. The way to do this was first to ask them simply to work with an existing study already assigned for the course; one that did the hard 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 will call Step 1), followed by a segment on writing their own research outline/paper (what I will call Step 3). What I propose is making use of the existing material you are teaching, and then reverse tracing its research design (Step 2), before getting to this Step 3. What follows is a description of the three steps, with a focus on Step 2.

### **Three-Step Guide to Teaching Research Design**

While all the steps are essential to the successful explanation of research design, I noticed student hesitation around research design if we, so to say, “throw them in at the deep end” (which would

be Step 1 and 3 in my outline below). Identifying an interesting puzzle, developing an original research question, and sketching out a method of analysis is intimidating to most undergraduate students. Thus, I propose adding a reverse research design step (Step 2) to prepare a foundation for getting to Step 3. Not only does Step 2 help link research design instruction firmly to the broad thematic objectives of any course (whether specifically methods focused or not), it also allows students to write a research design without the distracting anxiety around coming up with the “right” question (Step 3). Instead, they do all of the above while engaging with the work of a scholar they admire that speaks to the course’s theme.

I teach research design only after spending several weeks on the substantive and thematic element of the course. For example, the course that I use here for illustration is my intermediate 200-level Comparative Social Movements course. We spend five weeks on social movement theory and a midterm before turning to a component on case study and research design. This year, my first case study (in weeks six and seven) was Chris Zepeda-Millan’s (2017) book on *Latino Mass Mobilization*. Students already had the theoretical tools to comprehend the book’s argument and theoretical contribution. I wanted to now push students a step further asking them read it also for its methodology.

I thus begin with a session on research design (Step 1). Surely this is something similar to what many of my colleagues who teach research design already do. I go over core components, explaining what one would expect to find in a research proposal (question, puzzle, argument, data, methods, feasibility, significance, etc.). I use the analogy of research design as a fishing license.<sup>iii</sup> It is a way to convince a funder or professor that you know the ocean floor (the existing literature) and have the fishing boat and tools (method, skills, feasibility) so that when you embark on the trip, you are likely to catch some fish. There are many good ways to do Step 1. McCarty (2019), for example, experimented with a metaphorical framework for teaching research design using the metaphor of a Law & Order murder investigation and trial (McCarty 2019, 1). Alternatively, Warburton and Madge (1994) provide strategies of teaching research design through a snakes and ladders board game that simulates steps that arise while constructing a research design. But from there, I don’t ask them to come up with their question and write one of their own (Step 3). Before we dive into that, I want them to understand the core aspects of research design by first looking at some examples of polished work, and then going back and retracing the steps to design what the scholar who wrote that paper imagined at the earliest stage of that research project. So instead of moving to Step 3, we go back to our class reading(s) (in this case Zepeda-Millan’s book) to carry out the focus of this essay, the reverse research design (Step 2).

Step 1: Teach research design components and purpose

Step 2: Reverse research design

Step 3: Assign student-led research design

Working with Zepeda-Millan’s book, the class (depending on how many students there are, they can do this individually or in small groups) sets out to identify the strategies the author used in order to create a finished work. In a class using multiple case studies early on, students might also be invited to choose any case-study text on the syllabus to work with. Students tell me that working with a book they have become familiar with in the setting of the course removes some of the anxiety of designing a project from scratch. An added bonus is that they seem to have fun with it

by taking the creative license to explore the author’s profile and imagine what their dreadful grad school or professorial lives must have been like while embarking on a major research project. It goes something like this:

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**Step 2: The Reverse Research Design Assignment**

For this assignment, you need to place yourself in the shoes of the author(s). Rewind a few years and imagine 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 words, the plan of the research that will lead to the published book/article. You are allowed some creative license—obviously your imagined steps to producing this book/article will not be entirely those of the actual author. What is important here is 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 kind of evidence do you need to collect to make your argument? How will you collect it? (Where do you need to go?) What kind of methods will you use to collect (and later analyze) the data? Will you interview the actors? (If so, who are the actors, 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, 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 you propose.

*Significance:* Go big picture here and tell us why this project is important, both theoretically and practically. In other words, why should someone (other than your grandmother) give you money to do this work? And why will others want to read it in the future?

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

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Books are especially useful because students come to think of their appendices as instructional manuals. Indeed, one student, having read one for the first time, referred to the appendix as scholars’ “best-kept-secret” in knowing how to read and comprehend a study. The Zepeda-Millan

book was especially productive in this regard because of the appendix’s powerful statement on positionality. Students found a lot of hints there about the author’s own demographics, his relationship to the movements he studies, his critical views on the field’s understanding of “objectivity”. That 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 made the role-play of being a “scholar” all the more transformative. Thus, I especially recommend assigning this assignment with work written by scholars who are marginalized themselves (cf. Ayoub and Rose 2016). It is an added bonus of the exercise.

After this important exercise, students can now turn 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 at some point in the future. In many cases, scholars thus also use these to get funding for their research projects—money from donors to carry out their research. And finally, I note that for this course students will have to turn in a research design (in four drafts) detailing their own project and their plan for completing it. The next assignment goes a bit further, including a more substantial literature review. Having already done Step 2, they have some familiarity with shaping a question and what it will take to answer it. Despite that, I still like to supply them with mock questions that are common in any particular field, while insisting that these are only guiding examples and not at all exhaustive of the types of questions asked. I find this does not stifle creativity and it does help with the elusive step of writing “your first research question”. For example:

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**Step 3: The Original Research Design Assignment:**

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

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

DRAFT #1: 1-page proposal including puzzle and question

DRAFT #2: 3-page sketch including puzzle/question/argument/data and method

DRAFT #3: 5-page sketch including the above plus literature review

PRESENTATION: 10-minute presentation in our class’s Comparative Social Movements Conference

PAPER: Final Version + Short (Fulbright) Version

Potential questions include (but are not limited to):

- 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, e.g.:*
- 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 may 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?

Note: You will want to start thinking about this question early on, and meet to discuss it during my office hours. The website, Mobilizing Ideas ([www.mobilizingideas.wordpress.com](http://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 in length and must conform to all relevant guidelines concerning written work stated in the course syllabus.

In this assignment, I ask you to prepare a research design for your final assignment. A research design lays out a plan for how you will conduct a research project, which you may actually want to carry out at a later time in your academic career (e.g., consider it as the basis for a grant application). It 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):

*Puzzle, Research Question and Argument*

*Short Literature Review:* Your question should be framed in the relevant literature (e.g., frames, political opportunities, resource mobilization, networks). What would scholars expect you to find based on previous literature? Summarize your sources (many of these come from the syllabus), paying particular attention to how they relate to each other and your question.

*Data Collection and Methodology:* Same as the previous Step 2 assignment, followed by: What kind of primary sources will you use as evidence for your argument? Primary sources might include organizational mission statements, court decisions, analysis of counter-movement websites. Potential primary sources: archives in various university libraries and countries, online archives at a domestic or international organization.

*Feasibility*

*Significance*

- Presentation

Your presentations should demonstrate each component of your research design, should be 10 minutes long (no more) and include a PowerPoint with one slide for each of the above headings.

- A two-page version of it for Fulbright

The Fulbright Version includes the same components in a shorter form, following these Fulbright “Statement of Grant Purpose” guidelines (points will be docked for any deviations, including font/margins): “This 2-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 USA] ... 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 engage with it. Format: single-spaced, 12-point Times New Roman, 1-inch margins.”  
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There are many barriers to effectively teaching research design to undergraduate students. Such factors include whether a research methods class is a major requirement, whether students have an econometrics background, or whether there are curriculum requirements impacting on the course’s flexibility for independent student research (Monogan 2017). I wanted to develop an assignment that could be implemented for courses and students having all sorts of different 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 it at Occidental College, the whole department adopted the assignment as a requirement for all 200-classes. Most importantly, students have appreciated the assignment in years of course evaluations, praising it as foundational training for their later comprehensive thesis writing, for grant applications, and for reading and comprehending social science. Several have gone on to top graduate programs or 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 all the more substantial and achievable for students. **In doing so, it accomplishes multiple learning outcomes: teaching a substantively important text 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 our societies and institutions will face, providing them with the tools to formulate and ask those questions is one of the best ways we can support them as their professors.



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<sup>i</sup> Becker (2019) finds 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).

<sup>ii</sup> 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).

<sup>iii</sup> I thank Peter Katzenstein for this analogy.