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ABSTRACT

Many departments in colleges and universities require a capstone course that involves the students conducting a research project. This author has had over 20 years of experience teaching such a capstone course and describes a flexible research method for student research projects – the *vignette study* (an experiment embedded in a survey). She also has teams of undergraduate students working in her lab for research credit make progress on a vignette design as one of several research activities. The vignette study can be used for students across many majors, including but not limited to sociology, psychology, criminal justice, nursing, social work, and marketing. Detail is provided on how to teach a capstone course using this flexible research method.

KEYWORDS

Capstone course; vignette method; research experiences; research methods

For many years, I have been teaching a capstone course in sociology that requires the students to conduct individual research projects. I have also been directing teams of students (from both sociology and psychology) in independent research credit. In this article, I discuss how the vignette method can be used effectively in student projects, both in capstone courses and as a supplementary research experience for teams of students enrolled in independent research credit, and across several majors.

As a positionality statement, I am a faculty member in a sociology department with areas of research in the subfields of Social Psychology, Close Relationships, Sexuality, and Family. I have been teaching a capstone course in sociology for about 25 years and have been running a research lab since 2010. I have had a prolific research career, but am equally dedicated to teaching including of the capstone course. As I approach the end of my career, I want to share with others about the capstone course that I have developed.

The role of capstone courses and other undergraduate research experiences

Many majors in college and university settings require capstone courses, whose purpose is to "provide an opportunity for a student to integrate and apply their knowledge gained throughout their academic training, which culminates in a form of a product" (Laye et al. 2020, p. 201). A capstone course or senior seminar is frequently offered in the curricula of many majors in American universities (Hauhart and Grahe 2012; Lee and Loton 2019; McKinney and Busher 2011) – estimated to be in 60 – 80% of social science departments (Hauhart and Grahe 2012; Kain 2007; Perlman and McCann 2005). Furthermore, according to a survey of sociology and psychology departments in one region of the U.S. (Hauhart and Grahe 2010), 95% of the capstone courses included a research paper of some type, such as a literature review or a report based on analysis of data either collected by the students or made available to them by their instructor. Survey evidence from departments that offer such courses, students who are in such courses, and alumni indicates that capstone courses are beneficial for students by preparing them for graduate school and many professional positions (Laye et al. 2020; Love & Macllroy, 2021; McKinney and Day 2012). Today, more than ever, such skills are critical as there is the need to prepare students for a more data-driven world (Johnson and Gleit 2022). Despite having a prior statistics class, students rarely have a chance to analyze, interpret, and write up data in a more holistic manner until a capstone course.

As noted above, I have also directed teams of students in my research lab typically before they take a capstone course. Much has been written about the beneficial skills and outcomes that students receive

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from engaging in undergraduate research experiences (Grahe et al. 2012; Hunter, Laursen, and Seymour 2007; Medley-Rath and Morgan 2022). In my lab, the students work as research assistants facilitating an experimental study, but I also provide guidance on other research activities, including the preparation of a poster (based on secondary analysis of a data set that I make available) to present at our university's annual research symposium and preliminary work on creating a vignette study.

My capstone course in the context of other capstone courses offered in my department

Our Sociology program in a Midwest (public) university has been dedicated to offering a senior capstone course (referred to as "Senior Experience") since the late 1990s. We envisioned it as a course in which students integrate their training and knowledge in sociology and then produce new knowledge through a research project, broadly defined. We have required the course of all senior students after they complete their other core courses. Each semester, we offer 2–3 sections, and a subset of the faculty take their turn teaching this course. Each instructor can tailor the course to their general expertise in sociology and methodological strengths. I am typically the only faculty member offering a section that requires original data collection for a quantitative research project. Some faculty direct their students in a qualitative (interview) research project. Other faculty have their students do research projects on secondary analysis of a public-domain data set. More recently, some faculty have offered other models, including the entire class working on a community-based research project and a version geared to students who have internships or are working and then conduct an ethnographic study of their work experiences. The undergraduate advisor, with his awareness of the students' past academic performance and future plans, often directs students to the section in which he believes they will most benefit.

What is the vignette method?

The experimental vignette method has been used for years in various fields, including sociology, psychology, economics, criminology, education, social work, business marketing, and medical fields.Many articles have been published on the nuts and bolts of using the vignette method across several fields (Brauer et al. 2009; Finch 1987; Ganong and Coleman 2006; Hughes 1998; Jasso 2006; Wason, Polonsky, and Hyman 2002). With this method, researchers can examine the effects of different factors presented in the vignette (or other stimulus material) on the participants' attitudes, beliefs, or judgments – which represent the dependent variables. The vignettes are often written scenarios about a (hypothetical) situation or person(s), although could also be in the form of other stimulus material, such as an online profile, picture, audio or video, or a social media page.

It is a form of experiment because participants are randomly assigned to different versions of the vignette. However, it is a survey study as well because the vignette is embedded in a survey. Today, with online surveys (e.g., Qualtrics), the randomization can be done automatically. At a minimum, there would be one independent variable (IV) represented in the stimulus material that would consist of two levels or conditions. That is, there would be two different vignettes that would have identical information except for the experimental manipulation, which may be represented in only one sentence, phrase, or characteristic (e.g., the gender of the target person in the vignette). However, more complex designs are possible including an IV with three or more levels or more than one IV, which would result in multiple vignettes (e.g., a 3×2 design = 6 versions of the vignette). I encourage my students to conduct between-subjects designs, where each participant receives only one version of the vignette and the analyses compare the responses of the groups receiving different versions. Within-subjects designs – where participants receive multiple versions of the vignette – are more challenging for students to analyze (and have other methodological limitations).

The dependent variables (DVs) are the participants' reactions to the vignette (or other stimulus material), which could be perceptions, attitudes, attraction, forecasts, judgments, or expectations, and are typically in the form of closed-ended questions. The DV items can ask the participants to respond based on what they believe will be the perspective of the character(s) in the vignette, the participant's own viewpoint, or how they believe (general) others would respond.

To illustrate the use of the vignette method in a capstone course, I provide here two examples of vignette projects from my current semester. Alexis is studying participants' views of a hypothetical college student as a function of the hypothetical student's marijuana use (no use, occasional use in social settings, or daily use). The college student is also presented as either a male or a female; thus the design is 3 (marijuana use) × 2 (gender) and she has 6

different versions of the vignette which are randomly assigned in a Qualtrics survey. Her DVs include questions about how much the participants would want to be friends with this person, and also judgments of the person's character (e.g., likely academic success, popularity). As another example, Ashley is studying how people expect to feel after a month of searching for a partner but not being successful. She manipulates in a scenario whether participants are asked to imagine a month of searching through online dating apps *or* a month of searching through in-person methods (e.g., attending parties). In her DV measures, she asks participants how their self-perceptions may change and how likely they would continue searching using this method. For other examples of my students' projects using the vignette design, see Table 1.

I also encourage the students to include open-ended questions in their survey to gain experience content analyzing textbox answers and a final (brief) section of their survey with questions about the participants' own experiences with the phenomenon being studied (when applicable). For example, Ashley (referred to above) had a section of questions about the participants' own experience finding partners in different settings. The extra data allow the student to have an additional section of their results section beyond the findings based on the analyses of the DVs.

The flexibility of the vignette method for student projects

Students enter a capstone course (or a lab setting) with diverse interests and often have preliminary ideas for a research project, perhaps generated in a prior methods class that requires a research proposal. The vignette method provides the flexibility to students to pursue many possible research topics although the students' research ideas often need tweaking to be adapted to the vignette method. Many students welcome guidance in the development of a research topic appropriate for a vignette study. I encourage students to pursue topics that interest them personally, which increases their motivation for their project. I have

Table 1. Examples of topics pursued by my students using the vignette method.

Title of student's project	Brief further description
Revisiting Perceptions of Stepparents: Do Negative Stereotypes Still Exist?	A vignette was presented of a hypothetical situation in which the participant was to imagine running into an old friend who was accompanied by a child. The friend is presented as as either male or female (thus, either a father or mother) and either a biological parent or a stepparent of the child. Participants rated the hypothetical target on several dimensions, including personality, likeability, parenting competence, parenting love and enjoyment, and quality of the target's marriage.
A Vignette Study to Examine Perceptions of Sex Offenders as a Function of Gender	The vignette described a sex offender, and manipulated the gender of the offender. The participants were asked several questions including perceived future danger of the offender and how much punishment they should receive.
Is Monogamy Really Perceived as Superior? A Comparison with Nonmonogamous Alternatives	Participants were given one of three vignettes, which described either a monogamous relationship, a polyamorous relationship, or an open relationship. Participants then responded with several dependent measures, including the likelihood that the relationship would last.
How are Same-race Versus Different-race Couples Perceived?	Participants were randomly assigned to read about one of four couples: a white/white couple, a black/white couple, a Latino/white couple, and a black/Latino couple. The dependent variables included expected social network approval of the couple and likelihood the couple was to marry.
"Crazy" in Love: A Look at Mental Illness Stigma in Dating	One of three vignettes was randomly assigned to the participants. All three vignettes depicted a hypothetical dating profile, with no picture or name displayed. Participants were told to imagine the person as their preferred gender for a romantic relationship. Each profile had a section titled, "5 things about me". One had schizophrenia listed (but with the statement that it was under control with medication and therapy), one had depression listed (also stated it was under control with medication and therapy), and one was a control profile without any mental illness listed. Participants were asked about their attraction to the person as well as their forecasts of what a relationship with the person would be like.
All in the Family: Perceptions of College Students with Different Family Structures	This study examined how the participants perceive college students with divorced parents versus college students with married parents. A vignette was presented that manipulated the gender of the target and the parents' relationship status. Dependent variables included expectations of academic performance, financial stability, mental health wellness, and social wellness.
Extending the Physical Attractiveness Stereotype to Judgments about Sexual Experience	Participants were given a bogus internet profile portraying a target as attractive or unattractive and were also presented with a hypothetical survey completed by the target that presented the person as either high or low in sexual experience. The gender of the target was also manipulated. Dependent measures included desire to meet the person.
Forecasting a Relationship's Success: Does it Matter Where the Couple Met?	The participants were given a vignette that described a couple who had met in one of three ways: through friends, in a bar, or online. The dependent variables included the future success of the relationship.

several preliminary assignments that help them develop research ideas, as discussed in the next section.

The material that follows provides information more specifically on what I do in my capstone course, which is a 3-credit course focused exclusively on the students conducting their capstone research projects. Much less instruction and fewer requirements are given to the students working in my lab because their progress on a vignette study is only a portion of what they accomplish. For example, students in a first semester in my research lab – who are also busy conducting a team lab study – may only reach the stage of developing a research idea and creating a draft of their Qualtrics survey for a vignette study. Nonetheless, any progress on a vignette study is a valuable experience and some lab students return in a future semester primarily to conduct their vignette study.

Preliminary steps: standing on the shoulders of prior students and professional research

I have several preliminary assignments that help students develop research ideas and to facilitate the design of a vignette and appropriate dependent measures. In one assignment, the students receive access to brief information (abstract, vignette, and DV measures) of many projects conducted by prior students in my classes. Table 1 presents a few examples of the many topics pursued in my capstone course. An instructor using the vignette method in a capstone course (or lab) for the first time would not have these past examples available[1], but could develop a collection over time. In this preliminary assignment, I request the students to summarize 10 prior student projects (based on the limited information) and then describe briefly research ideas that they have developed based on five of the projects.

In a second preliminary assignment, I have the students do a similar task, but for professional (published) articles that include a vignette. I make the full articles available to the students, but have also created brief documents for each article that include scans of the most relevant information – the abstract, the vignette information, and a description of the DVs. For this assignment, similar to the assignment described above, students summarize 10 articles that interest them (based on the brief information) and then describe research ideas that they have developed based on five of them. By the time the students complete these two preliminary assignments, they have considered over 10 research ideas. A subsequent preliminary assignment involves the students describing the three research ideas that most interest them. I give feedback on the ideas, which often involves helping them further tweak them to be feasible. In the past, I have also had a preliminary assignment that involves viewing and completing three online surveys at the Social Psychology Network (https://www.social-psychology.org/expts.htm), which is not only a source of research ideas but also introduces the students to the format of online surveys. Finally, in another preliminary assignment, they choose a subset of several methods articles that describe the vignette method (e.g., Finch 1987; Ganong and Coleman 2006; Jasso 2006). These preliminary assignments usually take the first 2-3 weeks of the semester, and class time is devoted to instruction for the assignments as well as discussion of the ideas the students are generating.

The literature review development

The literature review is typically the most challenging part of the paper for the students to complete and for the instructor to guide. The students in my capstone class are expected to produce a thoughtful, integrative literature review for their topic, although the review is more modest than what would be expected if it were the entire capstone project. I encourage the students to begin by summarizing any relevant theoretical and empirical work on their topic, identifying themes in that literature, and then highlighting (with detail) any vignette-type studies on their topics. Then they are required to identify the gap in the literature (pointing to the need for a/nother vignette study) and provide their research questions or hypotheses. Students have challenges producing a high-quality literature review (e.g., Hart and Annear 2020; McKinney and Busher 2011), and thus instruction and exercises are provided. As one example, a class exercise is devoted to writing an opening first sentence and a first paragraph that will draw the reader in. Students also turn in a descriptive outline of their Introduction and receive feedback on it. They also submit their first page for early feedback, and engage in a class exercise in which the students sit around in a circle, snacks are provided, and printed copies of their first pages go around the circle for peer comments. I also provide many guidelines on how to write

[1]If you are new to using the vignette method in your capstone course, you might share the topics listed in Table 1 with your students and request additional topics from me.

empirical reports – both those I have created and those I have found in the public domain from others.

Institutional review board (IRB) approval

Over my years of teaching the capstone course, IRB rules and protocols have changed several times (based on federal guidelines as well as my university) concerning research conducted by students as part of a course requirement. For example, for a period of time, I was able to submit a batch IRB application for the entire class describing the basic method to be used by the students and then would submit brief modifications describing each project once the semester began. More recently, batch submissions have not been allowed, but official IRB approval is no longer needed (per federal guidelines) if the student research projects contain no more than minimal risks to the participants and will not be presented beyond the classroom or the university symposium. Nonetheless, all student research projects are designed as minimal-risk studies that would typically be granted an exempt status (e.g., participants must be age 18 or older, no identification requested, no deception [the vignette is presented as hypothetical], risks are minimal). Guidance is given on how to obtain official IRB approval for those who may want to present their research outside of the university setting, although few students choose this option. Regardless, I teach the students about IRB regulations and, in some semesters I have had them create an IRB proposal even if it is not formally submitted. A preliminary assignment involves completing the CITI (IRB) training.

Collecting and analyzing the data

My goal for the students' data collection is modest, which is to obtain 50 participants per individual project. The research projects are not publishable or generalizable, and often not presented outside of the classroom. I do not use the student projects to advance my own research agenda, although perhaps some instructors could accomplish this by being more directive in the projects that the students pursue. In my early years of teaching the course, the surveys were paper-and-pencil versions and the students obtained permission from faculty to distribute their brief surveys in classes. Now, I have all capstone students do an online survey. I am typically also teaching another course that has high enrollment and offers extra credit opportunities, and these students are presented the opportunity to complete a certain number of surveys for extra credit. Other instructors will also offer this opportunity, sometimes for extra credit and sometimes on a voluntary basis. The students also may post their survey on their social media pages with an announcement that presents essential informed consent information, including that only people age 18 or older may do the survey. There are other options for collecting data as well, including the Social Psychology Network (https://www.socialpsychology.org/expts.htm). If there is any course funding, data can be collected from sites such as MTurk or Prolific, although I have never used these for class projects. Generally, the data can be collected in about 1–2 weeks. Once the data are collected, I give instruction and tutorials about how to clean the data, transport the data into a workable SPSS file, and analyze the data. Students need considerable guidance on how to analyze their data, create tables, and write up their results.

The research project: one step at a time and requesting revisions

I divide the project into many smaller assignments, with later assignments involving revisions of earlier assignments. I generally have the students complete two tasks per week. In prior years, I had students submit their work during class time and in paper format, but recently they submit their work online and during non-class days. Each task is worth a certain number of points that correspond to the level of work required. I generally provide detailed feedback on each task within a day or two because subsequent tasks build on earlier tasks. Our department has assigned a part-time graduate teaching assistant to the capstone class, who also provides feedback on most of the assignments. Furthermore, for some of the tasks (e.g. hypotheses, draft of survey, certain sections of the paper), I require peer feedback. Thus, the students learn how to incorporate feedback from multiple people. Table 2 presents an example list of tasks required in my capstone course in order for the students to make steady progress in small steps and to receive helpful feedback to move forward to the next steps.

Presentation of the research

The students present their projects in two ways at the end of the semester. First, they do a 10–12 minute oral presentation to their classmates and often to a few additional visitors. Second, I arrange for a "Poster Class" during one of the last class periods. The

Table 2. List of tasks assigned to the students to facilitate steady progress on the projects.

Task #	Activity
#1	Hypotheses
#2	Research Proposal
#3	Draft 1 of the Qualtrics Survey
#4	Outline of Introduction/Literature Review
#5	First page of Introduction/Literature Review
#6	Draft 2 of Survey and IRB proposal (IRB optional)
#7	Draft 1 of Introduction/Literature Review
#8	Draft 1 of Method Section
#9	Final Draft of Survey
#10	Outline of Results section and Skeleton of Tables
#11	SPSS Syntax and SPSS template
#12	Draft 2 of Introduction/Literature Review
#13	SPSS Data Matrix and Frequencies on Variables
#14	Draft 2 of Method section
#15	Drafts of Tables, Including Actual Statistics
#16	Draft 1 of Results section (including revised tables)
#17	Draft 1 of Discussion/Conclusions
#18	Draft 2 of Results (including Tables) and of Discussion
#19	Draft 1 of Title Page, Abstract, and References
#20	Draft of PowerPoint for Presentation
#21	Draft of Complete Paper (all parts)
#22	Revised Presentation Slides
#23	Final Draft of Complete Paper
#24	Presentation to Audience

Notes: Each of the above tasks is assigned points toward the final grade, ranging from 5 points (e.g., #1, #4) to 25 points (#21).

students bring paper copies of their powerpoint slides, and each student is assigned a portion of the wall around the classroom to post their slides. Visitors then walk around the perimeter of the room and view the posters and talk to the authors. If another core course is being taught at the same time (e.g., Methods), I encourage that faculty member to bring their students to the class and view the posters for 10–15 minutes of their class time. In addition, many other faculty members and graduate students who are not in class at the time but on campus are willing to devote 15 minutes and drop by the event to see the posters. Students also invite their friends to come. It ends up being a culminating experience for the semester and the students are pleased to answer questions about their projects and often feel very proud of their work (as am I!). I also make it optional for students to present their research at the annual university research symposium.

Applications of the vignette method into other courses

I encourage the vignette method to be used in other courses as well, as research incorporated into multiple classes enhances the students' education (Caccavo 2009; Frankowski 2021). An instructor of a methods, statistics, or content-related class could incorporate a vignette-type study into their class. The project could be done with the entire class or teams of students, and some class time could be used for class discussion of the construction of items for the survey and other steps of the project.

Conclusions

There is no doubt that teaching a capstone course in which students conduct individual research projects and write an empirical paper from their data can be challenging and time-consuming for the instructor. However, teaching the capstone course to students who become excited about their research ideas and watching them learn the steps of research and analyses is very rewarding. I have had over 20 years to refine a capstone course that allows students to pursue a topic that interests them with a particular type of method, the vignette method (an experiment embedded in a survey). This method gives flexibility to the student topics that can be pursued and allows the instructor to streamline instruction on methodological issues in order to move students to the completion of their project in one semester. Student evaluations of the course and other anecdotal evidence (e.g., later emails from students) indicate the impact that the capstone research project can have on students as they move forward to other opportunities after their graduation.

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