Learning About Violence Against Women in Research Methods: A Comparison to Traditional Pedagogy

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The current study examined whether a community-engaged class in undergraduate psychology research methods was able to educate students about violence against women without sacrificing acquisition of research methods knowledge. We compared student outcomes in a traditional research methods course to those in a community-engaged research methods course. Students in the community-engaged course completed a research project on violence against women that was informed by the research needs of community partners. Drawing on pre- and post-assessments, we determined that students in both community-engaged and traditional courses showed significant increases in knowledge of research methods core concepts. In addition, students in the community-engaged course showed significant increases in knowledge about violence against women and beliefs about their ability to conduct engaged research in the future. Thus, the community-engaged course offered an opportunity to teach students about violence against women using engaged-learning practices without sacrificing acquisition of core research methods knowledge, relative to the comparison class. This study demonstrates that integrating trauma topics (in this case, violence against women) into the existing curriculum is a viable route to educating undergraduate students about trauma. Implications for incorporating trauma and community engagement into undergraduate curricula are discussed.

Keywords: trauma, service learning, community-based research, research methods, undergraduate teaching

Two separate, but related, calls in higher education provided an impetus for the current project. The first call focuses on the urgent need to educate students about trauma and its consequences (e.g., Courtois & Gold, 2009). The second call focuses on increasing the commitment of higher education institutions to community-engaged teaching practices, such as service learning, to contribute to the development of student civic agency (e.g., Peters, 2004; Saltmarsh, Hartley, & Clayton, 2009). We provide a brief review of the reasoning behind both of these calls to frame the current study, which compared learning outcomes in two research methods courses.

Trauma in the Curriculum

Trauma exposure is an unfortunate reality in the lives of many children and adults. Research has documented staggering rates of

violence against women, particularly abuse perpetrated by intimate partners (see, e.g., Tjaden & Thoennes, 2000). As Courtois and Gold (2009) have noted, trauma exposure that is interpersonal, such as violence against women, has especially negative consequences for victims, including a range of serious mental and physical health problems. Violence against women ripples out to affect others in the family system. For example, children who witness domestic violence (as well as those who experience direct abuse) face considerable psychological and physical health consequences (Edleson, Mbilinyi, Beeman, & Hagemeister, 2003; Kitzmann, Gaylord, Holt, & Kenny, 2003; Sox, 2004).

Given the prevalence and consequences of trauma exposure, and interpersonal traumas in particular, Courtois and Gold (2009) called for the integration of "basic information about trauma across the entire psychology curriculum, beginning at the undergraduate level" (p. 14). Courtois and Gold argue that trauma education should be embedded into curricula in a sustainable way (vs. making trauma the focus of occasional or add-on courses). In psychology programs, trauma education at the undergraduate level is important to several goals. For example, given the prevalence and consequences of trauma, the topic is a substantively relevant (if not a core) issue for many standard courses, ranging from child/life span development to health psychology to psychopathology and intervention. In addition, exposing undergraduate students to trauma scholarship early in their careers demonstrates to students that trauma scholarship involves a large, vibrant field focused on critically important public health issues. This awareness may influence students' professional development and graduate training goals early on, when they can make choices (e.g., to get involved in relevant externships or research experiences) that will

affect their career trajectories. Without exposure to scholarship on trauma, students may not know that career paths related to traumatic stress studies are even possible. Finally, some forms of trauma, such as violence against women, are directly relevant to students' experiences (either their own or friends and family members; see DePrince, 2005 or Messman-Moore & Long, 1996, for studies focused on violence exposure in college samples in particular). Equipping students with an academic framework for understanding trauma, such as violence against women, prepares them to engage a topic that is important in their communities.

Unfortunately, successful models for integrating scholarship on trauma into *undergraduate* psychology programs are conspicuously absent from Courtois and Gold's (2009) review because existing educational models primarily focus on professional development in relation to clinical practice and graduate curricula. Thus, undergraduate instructors have little theoretical or empirical evidence to guide their work as they integrate trauma scholarship into the curriculum. The lack of existing models is problematic. For example, smaller departments may be severely limited in the range of courses that they can offer at the undergraduate level, making it difficult to create stand-alone courses on trauma that can be regularly offered in the curriculum. Thus, creative models that integrate trauma scholarship effectively into existing (particularly required) courses are needed.

Community-Engaged Teaching

Much has been written in recent years on the importance of community-engaged teaching practices, such as service learning. Most definitions converge on the idea that service learning involves course-relevant, experiential activities that benefit student learning and development as well as the community (e.g., Bringle & Hatcher, 1996; Deeley, 2010; Jacoby, 2003; Peterson, 2009). Peters (2004) describes the importance of service-learning as derived "not by providing students with separate opportunities for civic education, however valuable such opportunities might be, but by providing a means for the integration of education for work and citizenship in professional programs of study" (p. 47). Much of the service learning literature is framed around the goal of developing civically engaged students who are prepared to be socially responsible, engaged citizens in their communities (e.g., Bringle & Hatcher, 1996; Saltmarsh et al., 2009). Frequently, service learning is defined by place, that is, students leave campus to provide a service to a community that has a problem or need (Saltmarsh et al., 2009).

Past research on service learning documents generally positive outcomes, not specific to psychology (see Strage, 2000). For example, comparing students in service-learning classes to those in traditional classes across a variety of disciplines (including psychology), Batchelder and Root (1994) documented that service learning students showed gains in critical thinking skills relative to their peers. A smaller amount of research has focused on whether service learning enhances mastery of the specific disciplinary knowledge presented in classes, though the available evidence is promising. In a recent meta-analysis, Conway, Amel, and Gerwien (2009) analyzed published studies that provided pre- and posttest data for classes using service learning across the educational spectrum, from kindergarten to college to adult education. The meta-analysis of 103 samples revealed a moderate effect of service

learning experiences on improved academic outcomes and a small beneficial effect on personal outcomes, looking at pre- to posttest change. The meta-analysis indicates that service learning is associated with positive, within group gains, but does not offer information about gains relative to traditional (non-service learning) methods. Addressing such issues, Strage (2000) compared student test scores at midterms and finals across separate Child Development classes, some of which involved a service learning experience and some of which did not. Students exposed to service learning experiences attained higher test scores when assessments involved narrative responses; scores on multiple choice exams were comparable. Thus, service learning was associated with comparable (and in narrative testing formats, larger) gains in measures of disciplinary knowledge compared to a traditional course.

Building on and expanding from the service learning/civic engagement paradigm, Saltmarsh and colleagues (2009) introduced the term democratic engagement:

> Democratic engagement locates the university within an ecosystem of knowledge production. In this ecosystem, the university interacts with outside knowledge producers in order to create new problem-solving knowledge through a multidirectional flow of knowledge and expertise. In this paradigm, students learn cooperative and creative problem-solving within learning environments in which faculty, students, and individuals from the community work and deliberate together (p. 10).

Moving away from an emphasis on traditional service learning concepts (such as the place where service is done away from campus), Saltmarsh and colleagues (2009) describe several characteristics of democratic engagement that have bearing on developing engaged teaching strategies for incorporating trauma into curricula. For example, from a democratic engagement paradigm, community relationships should be characterized by reciprocity, such that knowledge flows back and forth among stakeholders. Relationships should also be asset-based, rather than assuming that communities have deficits that students will fix through service. In addition, Saltmarsh and colleagues argue that knowledge production should be done with (rather than for) the public in an inclusive, collaborative way.

The characteristics of Saltmarsh and colleagues' (2009) democratic engagement concept fit nicely with the reality of the multidirectional flow of knowledge regarding trauma. For example, trauma-related knowledge can be produced by different people, in distinct forms, for diverse audiences. Knowledge about domestic violence can come from a survivor who shares her unique story with a counselor; from a community-based victim advocate who summarizes years of observations from the court room for new judges; or from student and faculty researchers who quantify the economic impact of domestic violence on the health care system in professional journals. Thus, research produced by students, faculty, and community partners together can reflect the integration of many interrelated sources of knowledge about trauma. For the purposes of this paper, we describe this coproduction of research knowledge using the term community-engaged (C-E) research.

Integrating Trauma Education, Community Engagement, and Research Methods

Many undergraduate psychology programs require students to complete a research methods course (or some variation on the

theme). Therefore, research methods courses provide an excellent opportunity to incorporate trauma education into the undergraduate curriculum even when resources are not available to dedicate regular courses to trauma (e.g., in smaller programs). Incorporating a C-E research project seemed like a potentially valuable vehicle by which to introduce trauma education into research methods while meeting the democratic engagement goals of reciprocity with community partners. That is, we hoped that C-E research would demonstrate to students that the research skills acquired during the research methods course were relevant to answering important, applied questions faced by the students' communities (see DePrince & Priebe, 2008). Further, a C-E research project would provide a way to mobilize the educational resources of the university to support agencies dealing with trauma and violence in communities while capitalizing on the expertise of community professionals working on trauma to educate students about important public health and social justice issues related to violence. Thus, the students and community partners could each contribute to addressing a pervasive community problem through the coproduction of knowledge.

Unfortunately, little systematic research has been conducted on community-engaged teaching in research methods courses generally, let alone with a focus on trauma. Among the few studies of which we are aware, Chapdelaine and Chapman (1999) described an undergraduate research methods course that involved a community-based research project in conjunction with a local police department. The authors offered anecdotal evidence that the community-based research project helped students to learn. For example, on the course evaluation, students responded favorably to a question about their perception of the extent to which the service learning project enhanced their learning. However, the authors did not provide data from pre- and postassessments and/or from a comparison group. Another study reported positive outcomes in a research methods course that used service learning, but again, evidence was limited to subjective accounts (Keys, Horner-Johnson, Weslock, Hernandez, & Vasiliauskas, 1999). Froese, Vogts-Scribner, Ealey, and Fairchild (2003) designed a course in which students applied research skills to benefit a nonprofit organization. The students reported positive feelings and learning from the experience after the course; however, no pretest or comparison group was included. Finally, Potter, Caffrey, and Plante (2003) demonstrated that a service learning course yielded course evaluations that were roughly equivalent to a those of a traditional research methods course.

The limited evidence provided by these studies suggests that research methods courses should be amenable to a C-E research emphasis. However, researchers have yet to evaluate whether objective measures of student learning are comparable in C-E and traditional research methods courses. For example, could a C-E approach dilute the focus on research methods in a way that could in fact be detrimental to students' acquisition of required disciplinary knowledge? Thus, one goal of this study was to compare systematically acquisition of research methods knowledge across a traditional and a C-E course.

A second goal was to evaluate whether research methods courses provide a place in the traditional psychology curriculum where students can learn about violence against women. Two comparisons are important here: 1) within student increases in knowledge about violence against women in a C-E course that

focused on violence against women; and 2) between group comparisons that allow us to rule out that students generally learn about violence against women in a traditional research methods class in which diverse examples of psychological research (including trauma) might be discussed. Thus, we predicted that students in the C-E course would show increases in knowledge about violence against women from pre- to postclass, but students in the traditional course would not.

Our third goal was to evaluate students' beliefs that they could do future C-E research relevant to problems in their communities, such as violence. If C-E courses function as suggested by the larger literature on democratic engagement, students in the C-E course should report greater efficacy in doing research that addresses community problems in the future, compared to students in the traditional course in which community engagement was not a focus. We were also interested in collecting information about students' perceptions of how the C-E course in particular contributed to their understanding of research methods. These qualitative data were collected to parallel research in the service learning literature that has generally relied on students' perceptions of the learning experience.

Participants

To address these goals, we compared two research methods courses. One course focused on violence against women using a C-E research component while the other course followed a traditional disciplinary approach. Because we could not randomize students to courses, our interpretations are limited to assessing whether the C-E course, relative to the traditional course, was linked to similar gains in disciplinary knowledge as a traditional course, as well as unique gains in knowledge about violence against women and beliefs about efficacy to do C-E research in the future. Below we provide the study overview and a description of the two courses.

Study Overview and Courses

The current study compared student learning outcomes in C-E and traditional research methods courses at a private university in the Rocky Mountain West region where Research Methods is a required, one-quarter (10-week), 5-credit course for undergraduate psychology majors. Research methods classes are typically capped at approximately 35 students and are taught regularly by both graduate students and faculty. Due to the 10-week time constraint, most research methods courses use archival data to instruct students rather than having students collect new data. We now turn to describing the similarities and differences in the two courses across several class attributes: class size and instructor experience; didactic content; opportunities to apply research skills; and assessment.

Class Size and Instructor Experience

Courses were comparable in size (see Table 1). The C-E course was taught by the first author, who had previous experience teaching this course in both C-E and traditional formats. The traditional course was taught by the third author, a graduate student with previous experience teaching various psychology courses,

Table 1

Descriptive Statistics for Assessment Measures by Course Type

	Traditional course	C-E course
	Mean (SD)	*Mean (SD)*
Research methods knowledge		
Pretest	5.14 (1.28)	4.45 (1.64)
Posttest	7.14 (2.23)	7.34 (1.42)
Violence against women knowledge		
Pretest	8.29 (1.85)	8.55 (2.18)
Posttest	8.48 (2.14)	13.00 (2.39)
Efficacy to do future engaged research		
Pretest	67.84 (15.13)	67.90 (13.86)
Posttest	72.05 (17.21)	79.14 (9.97)

Note. The Traditional course *n*'s were 22, 21, 19 respectively. The C-E course *n* was 28 across measures.

including an honors version of a research methods course. Notably, neither instructor had students enrolled in their respective classes who had taken courses with them previously.

Didactic Content

Both the C-E and traditional courses were organized around core research methods topics. For example, both courses began with an introduction to philosophy of science issues, moved into issues of measurement and validity as well as sampling, and then covered specific design approaches. Both courses dedicated substantive time to developing core research skills, such as conducting a literature review, using computer programs to run statistical tests, and writing scientific papers in APA format. Didactic content was delivered in both classes through a combination of lecture and hands-on activities (e.g., a "Pepsi Challenge" to illustrate the relative merits of between and within subject designs).

Within this overall organization, the C-E course drew heavily (though not exclusively) on examples from the empirical literature on violence against women to illustrate points about the research methods didactic content. To reinforce learning about both research methods and violence against women, the C-E course required students to complete primary source readings selected (where possible) from the domestic violence literature to illustrate the particular research methods concept for that class. The Traditional course drew on examples from the field of psychology more generally to illustrate learning points without any emphasis on violence against women. Readings were also assigned from a research methods textbook. Primary source articles in the traditional course supplemented the text for each new type of research design covered. For example, when students learned about observational methods, they read a chapter from the text on the topic as well as a research article that successfully employed an observational design.

Opportunities to Apply Research Skills: C-E Course

For the C-E course, the C-E research project was interwoven into the course across the quarter. Prior to the start of the course, the instructor partnered with two representatives from a state coordinating council focused on the intersection of domestic violence and child protection (council members included, e.g., employees from Human Services, a state domestic violence coalition, a prosecuting attorney's office, community-based advocacy and service agencies). In the previous year, the council conducted a statewide survey of child protection and domestic violence agency employees to evaluate each group's perceptions of problems at the intersection of domestic violence and child protection issues (e.g., at what point children's exposure to domestic violence becomes a child protection issue). The council had already examined their data descriptively, but sought collaboration to develop and test hypotheses about relationships among variables. After getting approval from the University of Denver Institutional Review Board to use these data in a class project, the instructor organized and prepared the data for the class.

During the first week of class, students learned about the C-E project. Class discussion and readings were used to give students background on domestic violence and child protection issues. At the third class meeting, the two council representatives came to talk with the class. The community partners offered perspectives and insights into the complex issues surrounding domestic violence and child protection as well as background into why and how they developed the survey that they administered statewide. They engaged in dialogue with students about research questions that were relevant to the needs of their council members as well as relevant to state policy. Copies of the survey materials (but not actual data) were made available to students.

Students were then charged with completing several tasks across separate assignments that ultimately led to a complete APA manuscript. These tasks, which each student completed individually, included: conducting a background literature review on domestic violence/child protection; identifying a specific research question(s) that incorporated the class partners' needs with the individual student's interest with the available literature; articulating directional hypotheses using variables available in the survey; and proposing statistical tests appropriate to the student's specific hypothesis/es. Once students identified directional predictions and planned analyses, the instructor and teaching assistant conducted the analyses (so that the partners' dataset was not released publicly), providing output to each student for their interpretation and write-up. With their output, students wrote results and discussion sections. Across the quarter, as students submitted each assignment dealing with a different section of an APA manuscript, they received extensive feedback to prepare the final APA-style manuscript.

Prior to submitting their final APA-style manuscripts, students organized panel presentations of findings for our partners, with whom they dialogued during a class meeting about the findings. The partners gave feedback to students that set their findings in the larger practice/policy context. With this partner input, students revised their earlier assignments to submit a complete APA manuscript, including Introduction and Discussion sections that placed the analyses of the partners' database in the context of the larger empirical literature on domestic violence and child protection. Students also provided feedback to the partners about the original survey in the Discussion section. For example, some students had feedback about potential limitations of how questions were phrased in the survey based on what they learned about measurement and item de-

velopment during the course. Under the instructor's supervision (and with student permission), the top papers were submitted to the community partners as the class product.

Opportunities to Apply Research skills: Traditional Course

In the traditional course, students used a large, publically available dataset to conduct individual research projects across the 10-week quarter. Notably, this approach is common among traditional research methods courses in our department where the short duration of the quarter makes meaningful new data collection, analyses, and write-up impossible. Because students generated their own research projects from a dataset covering many topics, each project was unique. For example, one student wondered if participant occupational prestige is related to parental occupational prestige. Another asked if gender is associated with age at which suicide is committed. As in the C-E class, students completed assignments throughout the quarter related to their individual research projects, including conducting a review of the literature, specifying directional hypotheses, performing appropriate statistical tests, interpreting results, and compiling references in APA format. Students received extensive instructor feedback on these assignments, leading to the completion of an APA-style manuscript and an oral presentation to the class.

Assessment

In both courses, students took weekly quizzes that focused on their acquisition of substantive research methods knowledge as well as completed short assignments in class that emphasized applying new research methods concepts that the instructor graded and that involved hands-on activities to illustrate research method topics (e.g., a lab on editing survey items to remove problematic phrasing). In the traditional course, students also took two exams (involving multiple choice and short answer).

Method

Participants included 52 undergraduates enrolled in Psychology 3050: Research Methods, either in Winter (C-E course; $n = 29$) or Spring (Traditional course; $n = 23$) quarter, who completed one or more measures at both pre- and posttest. Not included in this sample are 11 students for whom pretest data only were available and 4 students for whom posttest data only were available (due primarily to drop-add changes across the quarter and/or absences on assessment days). Of the 45 students who reported on their class status, 3 (7%) of students indicated sophomore status; 25 (56%), junior; and 17 (38%), senior. The majority of participants were female and White, reflecting the demographics of psychology majors at this university.

Measures

Students completed several assessment measures. First, a 10-item multiple-choice test was designed to assess disciplinary knowledge related to core research methods concepts. Concepts assessed included (but were not limited to) philosophy of science, ethics, sampling, measurement (validity, reliability), experimental design (including factorial designs), correlation, and threats to validity. Two versions of the test were developed that covered identical concepts. Each version comprised 10 items, each worth 1 point; thus, scores on the measure could range from 0 to 10. Test versions were distributed randomly to students at pretest. Students then completed the complementary version at posttest, thereby counterbalancing version by student to address any potential differences in version difficulty. Possible scores ranged from 0 to 10.

Second, five short-answer questions assessed knowledge about research on violence against women, including effects on children. Sample questions include: "What does research say about the ethics of doing research on interpersonal violence, such as sexual assault and domestic violence?" and "What does research demonstrate about the impact of having a community-based advocate on women's well-being following domestic violence?" Students were encouraged to give 1–2 sentence answers. Short-answer responses were scored by the second author, who was blind to whether the answers were collected at pre- or posttest as well as whether students were enrolled in the C-E or Traditional course. Answers were scored as follows: 1 = blank or no conception of the issues involved; 2 = a vague understanding of the issues involved; 3 = an adequate understanding of at least one of the issues involved; 4 = a good understanding of at least one of the central issues involved, or an adequate understanding of more than one of the issues involved. Possible scores ranged from 5 to 20.

Third, the students completed a 10-item measure of self-efficacy to do community-engaged research in the future. This measure was adapted from the Community Service Self-Efficacy Scale (Reeb, Katsuyama, Sammon, & Yoder, 1998). The original phrase "community service" was replaced with "community-engaged research" in all items. Sample items include: I am confident that, through community-engaged research, I can make a difference in my community; I am confident that, through community-engaged research activities, I can help in promoting equal opportunity for citizens; Through community-engaged research, I can apply knowledge in ways that solve "real-life" problems. Participants rated the 10 items on a scale of 1 (quite uncertain) to 10 (quite certain). A total score was computed by summing the responses; possible scores ranged from 10 to 100.

Finally, students in the C-E class also responded to a "1 minute" question. They were given one minute to write anything they wanted in response to the question, "How did doing a research project with a community partner improve your academic knowledge of research methods?" To code student responses to this question, all responses were reviewed by the first author, who identified three themes: 1) improved understanding or ability to apply course material pertaining to research methods; 2) perceptions of caring more and/or working harder in the class because of the C-E project; and 3) awareness of applications of research methods knowledge to real world/community problems more generally. Next, the first two authors coded the presence/absence of these themes for all participants. Percent agreement across the three categories ranged from 93–96%; differences were resolved through consensus.

Assessment Procedure

The research described in this manuscript was approved by the university's Institutional Review Board. Students consented to have their assessment data included in these analyses.

On the first day of both classes, students were asked to create a "secret code" by which their assessment data would be stored during the quarter (the code involved a combination of letters and digits known only to the student). Students were informed that the instructor would look at the scores on these measures, but would not know who earned what scores; and that these assessments did not have an impact on course grades. The students then completed the three pretest measures, including the two knowledge measures and the self-efficacy measure.

During Week 9 (of the 10-week quarter), the research methods and violence knowledge measures were readministered to students. For the research methods knowledge measure, students completed the version that was complementary to the one they took at pretest. The administration of these knowledge measures was *not* announced in advance, so that we could assess increases in knowledge in the absence of studying for an exam. During Week 10 of the quarter, the self-efficacy measure was readministered. At that time, students in both classes were also asked to indicate their class status (freshman, sophomore, etc.). Finally, students in the C-E class were also asked to indicate whether they knew the course involved a service learning component when they enrolled (yes/no). In addition, students in the C-E class were asked to respond to the open-ended question and were given 90 seconds to write down their thoughts. As at the pretest, students recreated their secret code on all assessment measures; measures did not include names or other identifying information.

Results

Class status of the participants differed in the two courses, $\chi^2(2) = 8.71$, $p = .01$, such that the C-E course comprised more senior students than the Traditional course. In the C-E course, 13 students indicated junior status while 14 indicated senior status. In the Traditional course, 3 students indicated sophomore status, 12 indicated junior status, and 3 indicated senior status. Only 3 students (11%) in the C-E course indicated that they knew prior to the first day of class that the course involved a service learning component. Descriptive statistics for the three assessment measures are detailed in Table 1.

Knowledge Measures

On the measure of research methods knowledge, paired samples t tests indicated that students showed large, statistically significant gains from pre- to post assessment within both Traditional, $t(21) = -5.75$, $p < .001$, Cohen's $d = 1.10$, and C-E, $t(28) = -8.87$, $p < .001$, Cohen's $d = 1.88$, courses. Using a difference score (such that higher scores indicate greater increases from pre- to postassessment), student scores in the C-E course (*Mean*: 2.90; *SD*: 1.76) compared to student scores in the Traditional course (*Mean*: 2.00; *SD*: 1.63) did not significantly differ according to conventional significance levels from pre- to postassessment, though a trend and medium effect size were noted, $t(49) = -1.86$, $p = .07$.

On the measure of knowledge about violence against women, students in the C-E course showed a significant gain in scores from pre- to postassessment, $t(28) = -6.86$, $p < .001$, Cohen's $d = 1.94$; however, students in the Traditional course did not, $t(20) = -.55$, $p = .59$, Cohen's $d = .09$. Using a difference score (such that higher scores indicate greater increases from pre- to postas-

sessment), students in the C-E course (*Mean*: 4.45; *SD*: 3.49), compared to students in the Traditional course (*Mean*: .19; *SD*: 1.60), showed significantly larger gains in knowledge about violence against women from pre- to postassessment, $t(41.70$, unequal variances assumed$) = -4.26$, $p < .001$; Cohen's $d = 1.49$.

In terms of students' beliefs about their efficacy to do engaged research in the future, students in the C-E course showed a significant gain in scores from pre- to postassessment, $t(28) = -4.35$, $p < .001$, Cohen's $d = .93$; however, students in the Traditional course did not, $t(18) = -1.51$, $p = .15$, Cohen's $d = .26$. Using a difference score (such that higher scores indicate greater increases from pre- to postassessment), a trend suggested that students in the C-E course (*Mean*: 11.24; *SD*: 13.93), compared to students in the Traditional course (*Mean*: 4.21; *SD*: 12.17), had bigger gains from pre- to postassessment, $t(46) = -1.80$, $p = .08$; Cohen's $d = .53$.

1-min Question

Of the 28 students who submitted answers to the 1-min question, "How did doing a research project with a community partner improve your academic knowledge of research methods?", 57% described improved understanding or ability to apply course material pertaining to research methods; 46% described caring more and/or working harder in the class because of the C-E project; and 29% described awareness of applications of research methods knowledge to real world/community problems more generally (students could have touched on more than one theme, thus, the total is greater than 100%). Exemplifying the first two themes, one student wrote "It forced me to care more than I probably would have since it affected people in need. Caring more translated into trying harder and really applying what I learned." Another student responded, "I got to apply my research methods knowledge to a real world situation and use real world data. The applied work helps cement the knowledge and that made the class more enjoyable but also more difficult." Similarly, another student wrote, "This made it feel like it mattered, the data we worked with were great and in participating I felt like I could make a difference. It made me want to do a good job beyond wanting a good grade, but also because I wanted my findings to be useful for our community partners." Exemplifying the third theme, two students wrote, "By doing research based on a real life situation I began to understand what impact research methods can really have in helping people. Research Methods is essential for finding solutions to problems in communities," and "It put a real life component to our project & taught us how we could make a difference in our communities through [these] types of research projects." Reflecting the first and third themes, another student noted, "It strongly improved my understanding because I got to see what we learn in class applies to real life. Although challenging at times, I feel I learned more this way & will be able to exercise what was taught in the future."

Discussion

Students in the C-E research methods class showed large gains in research methods knowledge and knowledge about violence against women as well as increases in beliefs about their efficacy to do engaged research in the future. Students in the Traditional course also showed significant gains in research methods knowl-

edge, but not in knowledge about violence against women or in beliefs about their ability to do engaged research in the future. Thus, the C-E course effectively integrated education about one aspect of trauma (violence against women) without hindering students' acquisition of core research methods concepts. In fact, C-E students' responses to the open-ended question suggested that many students believe that they worked harder to master the research methods material because of the C-E component. Thus, these data demonstrate that both courses were associated with significant gains in research methods knowledge, but the C-E course was associated with unique, additional gains in trauma knowledge and beliefs about efficacy to do community-engaged research in the future.

This study makes two important contributions. First, this is the only study (of which we are aware) to evaluate community-engaged teaching practices in a research methods course using pre- and posttests as well as a comparison course. Second, the study provides a template for incorporating trauma education (in this case, violence against women) into a core course that is common in many psychology departments' curricula. Thus, for departments that do not have the resources to implement frequent stand-alone trauma courses, this study demonstrates that effective integration of trauma education is possible into an existing, required course.

The current study also contributes to a growing literature on civic and democratic engagement that emphasizes the role that institutions of higher education can and should play in the development of socially responsible students whose education prepares them to address problems in their communities. In this case, we focused on the problem of domestic violence, particularly as it relates to child protection issues. The C-E class offered students a unique opportunity to learn from the expertise of people who are working on these issues in their community, while also learning to apply their knowledge of research methods to community problems. Community-based agencies further their missions to educate the community about violence while benefitting from empirical perspectives and knowledge (in this case, research methods knowledge). With ongoing calls for community-based agencies to rely on empirical data to guide practice and policy, this sort of partnership facilitates community-based agencies' use of data in the face of real economic pressures that might otherwise limit any role for research.

Limitations

Several limitations of the current study should be considered. We included an open-ended question in the C-E class to gather students' perceptions of the benefits of the project. However, data from the open-ended question relied entirely on student self-report and may have pulled for positive assessments of what was gained by doing a C-E project. The data indicate that the majority of students believed that the C-E project helped their understanding of course materials and nearly a majority believed they worked harder than they might have otherwise. Although students cannot know how much they would understand or how hard they would work in a traditional research methods class that they did not take, we believe students (particularly by their junior and senior year) do have a good sense of the effort they apply to their course work. Thus, their perceptions of increased effort because of the community partner is interesting from the perspective of developing class

assignments that maximize student engagement, particularly in courses such as research methods that can be perceived more negatively than other topical classes in psychology. None of the students' comments were negative about the C-E project. Future studies should expand this qualitative approach to ask students about drawbacks to a C-E class.

One possible limitation of the courses studied here is that students did not gain experience with collecting data in either course, or with running statistical analyses themselves in the C-E class. As mentioned previously, using archival data is a common occurrence when faced with constrained class time, as in the quarter system. Prior to these courses, students had already taken a required statistics class that emphasized data analysis; thus, they had previous experience running analyses. In the C-E class, students still were required to identify the analyses to be conducted and to interpret the output files themselves, even though they did not run the analyses themselves. The C-E students, therefore, gained experience with data analysis in a way that may be more amenable to instructors who are faced with time constraints.

The courses differed in terms of students' class status, with more senior students in the C-E than in the Traditional course. Thus, the C-E course may have shown bigger gains in knowledge of violence against women or on the measure assessing beliefs about doing C-E research because they were further along in their college tenure and career planning. Beyond this first glance, however, the picture is likely less rosy. Students are required to take a research methods course for the major; however, they can enroll any time after completing the first two courses in the major (an introductory course and a statistics course). Therefore, the Traditional course actually comprised more students who took research methods earlier in their careers (not putting it off until the last moments of the senior year), which may reflect interest in research methods and research careers, and/or motivation to engage the topic of research methods more generally.

In spite of differences in class status across the two courses, it does not appear that students who had interests in service learning self-selected into the C-E course. In fact, only 3 students reported that they even knew in advance that course involved a service learning component because of a notation in the registration system. The notation simply indicated there was a service learning component to the course with no further details about topic or project scope. Thus, the study does not appear burdened by significant self-selection problems. Also, the courses were taught in two sequential 10-week quarters, limiting differences across years in terms of student composition, cohort effects, and changes in curricula.

The courses also differed in terms of the instructors' previous teaching experience. The C-E course instructor is a faculty member who taught research methods courses previously (though not with the specific community partners described here). The Traditional course instructor is a graduate student who taught previously, including teaching an honors version of the research methods course, but who had not previously taught this particular course. While differences in teaching experience contribute to the nonequivalence of the groups, these differences also reflect the reality in many departments: the same course is often taught by instructors with varying levels of experience. Thus, this study is high in ecological validity insofar as we evaluated student outcomes in the context of the reality of teaching assignments for

required courses. Although it is not ideal to compare courses taught by instructors who have different levels of experience with the course, the comparison of the two courses would have been more of a concern if the instructor with less experience was also trying to build the community partnerships necessary to incorporating a C-E research project in the course.

Summary

The current study offers promising data to support incorporating education about trauma into existing psychology curricula. The C-E approach offers a blueprint for meeting student learning objectives while also connecting with the resources of the university with community-defined needs, thus blending trauma education and community-engagement. However, additional research is sorely needed to cover related topics. For example, would a traditional course that used violence research as an example throughout show comparable gains to a community-engaged course that also focused on violence?

In open-ended responses, many students in the C-E course believed that their understanding of material was deeper because of the community partnership. For example, some students reported that they were inspired to work harder because they believed their work mattered. Almost one third of students expressed an understanding of how research could be used to address community problems, such as domestic violence. The reciprocal relationship between students and community partners facilitated both parties' contributing knowledge to the final C-E research product—from the data that partners collected to the papers students crafted with feedback from partners. This reciprocity allowed for synthesis, dialogue, and learning that is valuable to student education and to providing agencies that are working on trauma-related problems in the community with tangible products that can contribute to their policy and practice work.

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