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## Learning and Doing Together: Student Outcomes from an Interdisciplinary, Community-Based Research Course on Homelessness in a Local Community

Mariah Kornbluh  
*University of South Carolina*

Jennifer Wilking  
*California State University, Chico*

Susan Roll  
*California State University - Chico*

Lindsay Banks  
*University of California, San Francisco*

Haley Stone  
*California State University, Chico*

*See next page for additional authors*

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## Authors

Mariah Kornbluh, Jennifer Wilking, Susan Roll, Lindsay Banks, Haley Stone, and Jessica Candela

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## Abstract

Colleges and universities continue to work toward innovative high-impact learning experiences to promote informed citizenship. Pedagogical research highlights the value of both interdisciplinary teaching and community-based participatory research (CBPR) in undergraduate civic development. Yet, research is limited in examining undergraduate student learning outcomes employing both pedagogical approaches. Utilizing mixed methods (i.e. surveys, concept maps, and focus groups) this study investigates the student learning outcomes of an interdisciplinary course (political science and criminal justice, community psychology, and social work) consisting of a CBPR project to inform local policy surrounding homelessness. Findings highlight student growth in the domains of: 1) interdisciplinary collaboration (applying an interdisciplinary lens and resolving diverse perspectives), 2) transference of course knowledge to real-world application, 3) critical consciousness building (specifically, critical reflection), 4) civic development, and 5) increased self-awareness. Finally, this paper highlights implications regarding course development, lessons learned, and future assessment.

## Introduction

Communities across the country face challenges stemming from a growing homeless population, especially on the West Coast (U.S. Department of Housing and Urban Development, 2017). In fact in 2017, 49% (91,641 people) of all unsheltered people in the country lived in California. Local municipalities struggle to balance limited resources, varying political agendas, and a lack of concrete data to find solutions to this complex problem.

Universities have a chance to engage students in this pressing issue. Homelessness, a complex and multidimensional problem, provides students with an opportunity to research, analyze, and inform community solutions. Additionally, universities can leverage their resources to ensure that the community remains aware of local issues, offer students pedagogies situated in the real world, and provide opportunities for both skill development and civic engagement.

The current study takes place in Chico, a small, northern California city in which the university accounts for more than 20% of the population. With a homeless population of over 1,000, the city struggles to find solutions in an atmosphere of scarce resources. These circumstances inspired three professors to create an interdisciplinary,

community-based participatory research (CBPR) course as an opportunity for students to address local policy. Students across three disciplines—political science/criminal justice, community psychology, and social work—used research to address homelessness policy solutions.

This manuscript explores how a course combining the components of interdisciplinarity and CBPR impacts student learning and attitudes. We argue that the combination of CBPR and interdisciplinary teaching may be particularly effective for student learning, especially with respect to civic skills, behaviors, and values. To assess this expectation, we use a mixed methods approach.

This study is especially important as post-secondary education is increasingly viewed as a key venue for enhancing students' civic knowledge, competencies, values, and skills for social action (Einfeld & Collins, 2008; Holley, 2009). Thus, educators continue to work toward developing innovative and high-impact learning experiences to promote civic development and informed citizenship (Brownell & Swaner, 2010; Kilgo, Sheets, & Pascarella, 2015).

While the literature suggests that civic development is promoted by both interdisciplinary courses (Letterman & Dugan, 2004; Sternberg,

2008) and courses that incorporate CBPR (Bach & Weinzimmer, 2011; Lichtenstein, Thorne, Cutforth, & Tombari, 2011; Strand, Marullo, Cutforth, Stoecker, & Donohue, 2003), there is little information concerning the impact of courses that combine these pedagogical elements (Dunbar, Terlecki, Watterson, & Ratmansky, 2013; Lambert-Pennington, Reardon, & Robinson, 2011). Additionally, few of the evaluations of interdisciplinary teaching and CBPR, both independently and jointly, systematically evaluate student learning outcomes (Burgett, Hillyard, Krabill, Leadley, & Rosenberg, 2011; Lester & Evans, 2009; Ottinger, Worthington, Gold, Ewing, Fridley, & Pond, 2012).

We begin by reviewing scholarship regarding how interdisciplinarity teaching and CBPR independently and jointly affect student learning outcomes. Next, we describe our assessment methods and present findings. Lastly, we discuss the implications for interdisciplinary teaching and community engagement within higher education.

### ***Community-Based Participatory Research***

Broadly, community-based research is a collaborative effort in which community members and academics engage in research around an identified community need (Stocking & Cutforth, 2003, Strand et al., 2003). Community and academic collaborations through CBPR are equal partnerships, valuing different types of knowledge (Strand et al., 2003). Additionally, in contrast to traditional scholarship focused primarily on publication, the end goal of CBPR is action oriented, focused on promoting social change (Bach & Weinzimmer, 2011; Strand et al., 2003).

Studies indicate that including students in CBPR research has several positive outcomes for student learning, including students gaining a sense of personal empowerment, a deeper understanding of the research process, enhanced understanding of community resources, and a greater investment in public issues (Bach & Weinzimmer, 2011; Lichtenstein et al., 2011; Stocking & Cutforth, 2006). Furthermore, students who participate in CBPR are better prepared to focus on community needs and have an increased awareness of community issues (Strand et al., 2003).

The model for CBPR in this course incorporated the central tenets of community-based research outlined by Strand and colleagues (2003), including relationship building, as well

as the creation and dissemination of knowledge to and for the community with a goal of creating social change. While the topic of homelessness was chosen by the instructors, and was not the result of students conducting a needs assessment, the issue of homelessness was chosen because it had been prevalent in city council agendas, the local media, and other forums across the community. Students had the opportunity for service (e.g., volunteering at a shelter). This was done in the context of relationship building within the local community (e.g., shelter residents, service providers). Thus, we stress that this activity is a key component of community-based research (e.g., relationship building and reciprocity between research and community), as compared to a course solely focused on service-learning.

### ***Interdisciplinary Teaching***

Interdisciplinary teaching utilizes multiple perspectives and disciplines to examine and facilitate comprehensive understanding of complex, real-world issues (Newell, 2010). In contrast to collaborative or team teaching, in which instructors plan and deliver course material together (Lester & Evans, 2009; Letterman & Dugan, 2004), interdisciplinary teaching intentionally uses multiple disciplinary perspectives to provide students a more comprehensive and nuanced understanding of an issue.

Research indicates interdisciplinary courses enhance students' critical thinking, teamwork, comprehension, and civic development (Mahoney & Brown, 2013). First, interdisciplinary teaching positively affects students' understanding of interdisciplinary work, specifically collaboration as well as their application of tools from various disciplines (Mahoney & Brown, 2013; Sternberg, 2008). Evidence illustrates that interdisciplinary teaching increases student comprehension of and engagement in course material (Mahoney & Brown, 2013), including developing critical thinking skills illustrated by evaluating evidence from varying perspectives (Borg & Borg, 2001). Finally, interdisciplinary teaching also promotes students' dedication to civic engagement and community issues (Dunbar et al., 2013).

### ***Combining High-impact Practices: CBPR & Interdisciplinarity***

Few courses appear to combine CBPR with interdisciplinary teaching. This is surprising, given the complementarity between these pedagogies.

CBPR involves collaboration to address real-world problems that inherently involve more than one discipline (Sternberg, 2008). In this way, CBPR naturally encourages the breaking down of disciplinary boundaries and fosters collaboration with the local community (Dutton, Lopez, Brown, & Simmons, 2015; Jung, 2017).

While limited, scholarship exploring student outcomes from courses consisting of CBPR and interdisciplinary teaching highlights that this combination may be impactful for students (Dunbar et al., 2013; Dutton et al., 2016). The interdisciplinary and community-centered approach allows students to engage in community issues and take an active stance on a solution (Dunbar et al., 2013; Jung, 2017). The CBPR component provides a more complex, concrete real-world experience for students to engage with (Dunbar et al., 2013; Ottinger et al., 2012). In addition, the skills acquisition through CBPR has the potential to empower students to become more civically engaged (Dunbar et al., 2013; Dutton et al., 2015; Lambert-Pennington et al., 2011).

Given the complementarity of the pedagogies, as well as evidence from courses combining interdisciplinary teaching and CBPR, we argue that courses incorporating both of these high-impact practices may be especially beneficial for students in developing civics skills, behaviors, and values. In the next sections, we describe the course design and methods of assessment of student learning outcomes.

### **Design of an Interdisciplinary, Community-Based Research Course**

As we (first three authors) became interested in the issue of local homelessness, we began to recognize the growing community need for high quality data, and the potential for students to be involved in conducting research. To achieve this end, instructors informally linked three upper division classes—Introduction to Research Methods in the Department of Political Science and Criminal Justice, Community Psychology in the Department of Psychology, and Social Welfare Policy, Programs & Services in the School of Social Work. All three classes were scheduled at the same time and met jointly (in a larger space) for approximately 40% of class meetings. Students received credit for the course in which they were officially enrolled. Each course maintained and assessed discipline-specific student learning outcomes. Notably, shared goals for the course consisted of an increased

understanding of local homelessness, as well as an enhanced understanding of interdisciplinary and community-based research. These goals were assessed through focus groups, surveys, and mind mapping.

Unofficially joining the three classes helped to overcome some administrative barriers but created others. For example, administrators did not have to determine which department would be credited with enrolled students, as would be the case if the courses were officially linked. Additionally, joining the classes informally was less costly in terms of faculty time than hiring three professors to teach one course. However, one of the main administrative challenges of maintaining three independent classes was finding a campus space that could simultaneously accommodate students from all three classes. Joint class sessions were held in a large auditorium, and the fixed, forward-facing seats were not ideal for group work. In addition, course instructors effectively had to evaluate their teaching twice: once using the standard instruments required of every traditional class, and again through an instrument specific to an interdisciplinary CBPR course (which they developed).

The courses focused on the issue of homelessness and explored the central question: “How does research inform policy at the local level?” During joint class sessions, students across all three courses met in interdisciplinary project groups to discuss shared readings and engage in a community-based research project. Students were strategically introduced to methodologies and theories from across disciplines centered around homelessness, policy, and research.

Multidisciplinary student groups designed and implemented two surveys. To inform survey development, guest speakers from the community (e.g., service providers, an evaluator of the recent Point-in-Time (PIT) Survey)<sup>1</sup> were invited to discuss core issues for homeless individuals and existing policies and services (e.g., Housing First, criminalizing homelessness). For example, social workers from a local homeless youth drop-in center discussed the special needs of young people who are without stable housing and those who are LGBTQ+. In line with community-based research, members of the community identified

<sup>1</sup>The Point-in-Time Survey is a federally mandated survey providing an unduplicated count of the number of sheltered and unsheltered homeless individuals in a single day.

the content, scope, and population surveyed. One theme that emerged both in class discussions and in presentations from community experts was the gulf between perceptions held among the housed population about homelessness, versus the actual experiences of people experiencing homelessness. Based on this feedback, students chose to conduct two surveys exploring parallel issues: 1) understanding beliefs and stereotypes about homelessness held among the housed community, and 2) collecting data regarding the actual experiences of people experiencing homelessness (e.g., willingness to work and use services, causes of homelessness).

Students also engaged in data collection and went through an extensive training in ethics. Training included piloting data survey entry, mock survey interviews, and a critical discussion around safety. This training was co-developed and led by an evaluator (a local community member) who led the 2017 PIT. Lastly, during the day of data collection, students were supervised by a team of faculty, graduate students, and the 2017 PIT evaluator.

Students surveyed more than 250 people, including 100 individuals who self-identified as homeless<sup>2</sup>. In order to further promote a reciprocal partnership, students participated in the National Make a Difference Day, volunteering at a local homeless center (one of the sites for data collection). Students engaged in data cleaning, analysis, and generated policy recommendations. Students presented their research results and policy implications at a research forum on campus. Additionally, we partnered with a student to disseminate the findings through local community and media presentations.

### Methods of Assessment

We selected to employ a mixed method approach with intent for triangulation (Greene, Carcelli, & Graham, 1989). Prior research stresses that utilizing mixed methods to identify convergent and divergent themes, potentially bolsters the credibility of findings and provides a more holistic assessment (Creswell & Creswell, 2017; Greene et al., 1989). Data collection included: 1) mind maps regarding the issue of homelessness, 2) a retrospective survey of student learning outcomes, and 3) two focus groups (10 students each). Institutional review board approval was received

<sup>2</sup>Sixty percent of housed residents identify as male, whereas 40% of respondents identify as female; 63% of housed respondents were between the ages of 18 and 34, while there was greater variation in the ages of homeless respondents.

for all research protocol prior to the start of data collection at the beginning of the semester. All data collection procedures were approved through the Institutional Review Board at California State University, Chico (#7610). Students could only participate if they provided consent, and consent was gathered for each stage of the research process.

Mind mapping is a graphic organizing tool in which key concepts emerge from a central theme (Budd, 2004). Mind maps have been applied in prior educational research as a tool to enhance critical learning, self-reflection, and formative assessment (Hay, 2007).

Students completed mind maps at the beginning and end of the semester. Students were given a basic overview of mind mapping using resources such as the website [mindmapping.com](http://mindmapping.com). They were then provided a blank sheet of paper and markers, and were instructed to write the word “homelessness” in the center of the paper. Next, they were invited to think of any and all ideas, concepts, words, and images that, in their mind, connected to the word homelessness. Students made branches from the main idea to illustrate connections. A total of 12 students (four students from each of the three classes) were randomly sampled. Mind maps were recreated using Visone, a visual software tool that provides an opportunity for network analysis (Visone Team, 2011).

Mind maps were analyzed using social network analysis. Network density, one measure of social network analysis, was employed in this study along with thematic content coding. Social network analysis identifies patterns of relationships among a set of actors (e.g., concepts within the mind map) and quantifies the structure of these connections within a bounded system (Marin & Wellman, 2001). Network density reflects the number of connections each actor (i.e., idea/concept) had within the network out of all possible connections (Kornbluh & Neal, 2016). The network density of each mind map was calculated, thus operationalizing network density as a proxy for critical thinking and analysis. For instance, over time we anticipated student mind maps would illustrate greater network density, as students’ understanding of homelessness became more complex and nuanced.

Summative content analysis involving counting and contrasting key phrases, words, and content was also conducted on the mind maps (Hsieh & Shannon, 2005). Thematic content analysis was conducted by clustering similar

words. Two notable themes emerged. First, students identified individualistic causes around being homeless (e.g., being homeless was due to individual choice). Second, students stressed systemic causes surrounding homelessness (e.g., being homeless was a result of a lack of affordable housing). These different rationales were counted, and descriptively compared. We anticipated that over time students would be more likely to identify systemic causes and solutions toward addressing homelessness.

Four months after completing the course, students were invited to attend a two-hour session to evaluate the course, including a retrospective survey and focus groups. Retrospective surveys consist of questions assessing participant knowledge, skills, or behaviors before and after an event (Pratt, McGuigan, & Katzev, 2000). Research indicates that retrospective surveys address issues of data incompleteness, and response shift bias often prominent in traditional longitudinal surveys (Pratt et al., 2000; Raidl, Johnson, Gardner, Denham, Spain, Lanting, Jayo, Liddil, & Barron, 2004). First, students completed a six-question retrospective pretest in which they evaluated what they knew and felt about the issue of homelessness both before and after taking the course. For example, prior to and following the course, students evaluated how they would respond to the following statement: “I have an understanding of the complexity of addressing homelessness in our community.”

Next, students were randomly assigned to one of two semi-structured focus groups, taking care to ensure a distribution of majors across both groups. Focus groups consist of facilitated dialogue among five to eight participants, around a series of semi-structured questions exploring a key content area (Morgan & Krueger, 1998). Research indicates that focus groups can allow for a more in-depth exploration of key content, allowing participants to build off one another’s experiences as reference points and recall experiences as well as alternative views (Morgan & Krueger, 1998). Notably, focus groups can also have challenges including variation in participation (e.g., quiet individuals, and individuals who dominate the discussion), as well as participants altering their answers in fear of being judged by others. To avoid the pitfalls of focus groups, two facilitators trained in focus group facilitation were present for each group. Intentional steps were taken to ensure group norming, encourage active participation,

and provide opportunity to discuss differences (Morgan & Krueger, 1998). In the context of this study, five guiding questions were posed to each group including, “Overall, did you find the course to be an impactful learning experience?” Focus groups were audiotaped and transcribed. Content coding was employed in which three coders independently reviewed the transcript, identifying emerging themes from the data. To ensure credibility of findings, two of the coders served as external auditors. A codebook was then developed via consensus and applied to the focus group transcript to ensure inter-rater reliability. The two additional instructors reviewed the codebook for external validity.

## Results

Across both focus groups, participants described opportunities within the course that facilitated professional skill development. These included interdisciplinary collaboration, application of content to the real world and critical reflection, as well as civic engagement. Retrospective student surveys and mind maps further corroborated these outcomes. By engaging in both an interdisciplinary and CBPR course, students developed a complex understanding of the issue of homelessness within their local community. Participants also articulated barriers and challenges to engaging in this work.

### *Student Learning Outcome 1: Interdisciplinary Collaboration*

Students expressed appreciation in engaging in an interdisciplinary course across both focus groups. In particular, students discussed developing skills in engaging in collaborative work from diverse disciplines. By way of example, one student said, “I liked working with the other students... the different perspectives are amazing.” Students articulated that engaging in the interdisciplinary CBPR project facilitated an opportunity for them to develop new perspectives and gain exposure to new disciplines. As illustrated in the quote below, student interviewees stressed that engaging with peers from different disciplines provided insight into how local policy and legislation influenced housing instability within the community:

I remember when our group was working on the social aspect of it, they talked about policy and how they were brainstorming.... I liked how they [political science and

criminal justice students] talked about legislation, even within Chico, then, the government funding. I just really liked learning from all perspectives.

Notably, these opportunities for interdisciplinary collaboration differed between students based on their discipline. For instance, psychology and social work students noted that engaging with political science and criminal justice students allowed them the opportunity to see their respective fields address macro-level issues, as compared to individual treatment. As one social work student noted, her approach to promoting psychological wellness had primarily been focused on individual treatment:

I'm like, I'm here to work one-on-one with people but I did like a one-eighty and was like "Whoa! This does help people in a larger way."

Through the course this student developed an awareness of how the discipline of social work could be utilized to address policy, impacting mental health at a larger scale (i.e. community-wide). Additionally, political science and criminal justice students received further exposure to the psychological health issues surrounding homelessness, thus humanizing and further personalizing the issue.

Engaging in CBPR and interdisciplinary collaboration was also challenging for students. For instance, students struggled to define clear roles across disciplines. In the following quote, a student grapples with how to handle diverging perspectives while fostering group cohesion. "I think there was just different expectations. Well, this is what we're supposed to do.... Oh well, no, we're supposed to do this." While interdisciplinary collaboration was identified as a challenge amongst interviewees, some focus group participants also expressed value in having the opportunity to manage conflict, and conflicting expectations as this dynamic reflected engaging in real-world community work. For example, one interviewee articulated the importance of the course providing a safe environment for developing skills in managing different perspectives, which he identified as valuable for his own professional aspirations:

I think that some of the value of the class was...in managing those differing views

and managing those roles. Especially... if you want to go out and do this kind of stuff. I think that's going to happen and I think that's...where a lot of the value in the class came from. I mean, making that a safe environment, to kind of, have those conflicts and work through them and... navigate that.

In sum, students noted that they developed skills in interdisciplinary collaboration. This encompassed learning new perspectives, applying multiple disciplines to a social issue, teaching others, and managing interpersonal conflict.

#### *Student Learning Outcome 2: Application of Information to the Real World*

Participants across both focus groups also highlighted the value of gaining real-world experience through community research and volunteering. For example, the interviewee below stresses the transference of course content and skills to real-world challenges:

It [the class] made me realize how we applied what we were learning in the class to the real world. Everything we were learning about homelessness from the psych aspect of it, was applied to the research questions, the actual [service day]. And it just like, made me realize, this is a local issue that is.... It's something that we have to deal with. It was very impactful for myself, and I learned a lot.

The experience of conducting research among community members impacted students in several ways. First, the experience provided an opportunity to practice research skills acquired throughout the class. For example, one student noted, "Going out and, like, talking with people and just getting a lot of information...it was really cool. I didn't know how to conduct research that way until I took this class." In addition to practicing research skills, the information acquired through conducting surveys provided students with a better understanding of the issue. "...Seeing the end results and being able to look at the data was really cool for me. It was like, 'whoa—look what we did.'"

Interacting with community members challenged students by pushing them out of their comfort zones:

I just really liked being able to go out in the community and do the Make a Difference Day, and as a group go out and talk to the housed and unhoused people. I thought that was going to make a really big impact on the students. You know, people who usually don't interact with people who are houseless. So...I enjoyed that.

For some students, the practical experience was a way to contextualize and cap the experiences of an entire degree program:

And that was really just like every part of it was just like growth, and new, and you know? Finally, being able to put what we've learned all this time, I mean because we're seniors now.

Another student appreciated the opportunity to practice professional skills, "And so as a social work student it's really good we got to practice some of the things that we've been learning."

Community-based work is not without challenges, and students noted both the difficulties and limitations of their real-world experience. Specifically, a student noted the inherent messiness experienced on the day of the research and volunteer opportunity. "I liked the volunteering with the survey. It was just kind of...unorganized. I don't know, maybe just like a little bit more planning going into that."

Overall, results from the retrospective survey corroborate focus group findings surrounding the transference of skill developed toward real-world application. For example, in reflecting on the statement, "I know how to conduct research to inform my community," the mean response prior to taking the class was a 2.08 (SD = .86, 1-4). After taking the class, student confidence in this statement increased to 3.92 (SD = .49, 3-5).

Overall, students appreciated the opportunity to practice research and professional skills in the community. Through talking with community members about homelessness, students gained comfort in interacting with people different from themselves and acquired a richer understanding of homelessness while utilizing community-based research to address the issue.

### *Student Learning Outcome 3: Raised Critical Consciousness*

Data reveal that the class not only increased participant awareness of the issue of homelessness, but also facilitated a more complex, systemic understanding regarding the root cause of homelessness. Education liberation theorist Paulo Friere (1993) refers to this cognitive transformation as critical consciousness. Critical consciousness consists of three key components: 1) understanding systemic inequality, 2) feeling motivated to act, and 3) engaging in collective action (Watts, Diemer, & Voight, 2011). For the focus of this paper, our analysis will explore critical reflection, the first phase of critical consciousness building.

Not surprisingly, the semester-long substantive focus on the class, and the opportunities for community involvement, increased student systemic awareness of homelessness. Importantly, the class also increased student awareness of how to engage in efforts to address the root cause of the issue. One student commented, "We just talked about it...what's going on [in Chico]? Why are there so many people here that are living on the street? I didn't know how to help them, or even where to go to maybe volunteer to make some sort of difference. So this class kind of gave me all of that. It was really cool. I really...I needed to take it." For another student, the class raised awareness of the scope of the issue and made clear the need for more consistent and strategic engagement:

I know before this course, I used to just volunteer, you know, around the holidays in LA. So, I had somewhat of like, interaction with the homeless. But it wasn't like, seeing their whole situation. It was just that one day of year where they would get, like, a special meal. But then, once I did this, I just realized that they are humans also and that it's not just like, they need help one day of year, but all 365 days, you know?

For others, the class made the social issue much more approachable and less intimidating. Thus, students felt confident to further examine the stigma surrounding homelessness:

I'm definitely not afraid of the homelessness issue anymore. Like sometimes it was a little like, too much of

an issue...“It’s too big, I can’t do anything.”  
And now I don’t feel like that.

This also had an important impact on understanding how others can affect homelessness. Thus students developed their own theories of change regarding the importance of breaking down social stigma and encouraging larger community engagement. As one said:

I feel like anything is gonna help and people need to be [more aware]...the more people are going to get involved. I definitely try to. My ears do perk up when that comes up and I’ll try to talk about it.

Results from the retrospective survey suggest that the class increased the complexity of students’ understanding of the issue. Prior to the class, student participants had a mean response of 2.62 (SD = 1.50, 1–5) to the survey item, “I understand the complexity of addressing homelessness in Chico.” After taking the class, the mean response increased to 4.31 (SD = .85, 2–5).

Mind maps further corroborated this trend, illustrating student growth in their complexity of understanding homelessness. For instance, the average ego network density at the beginning of the course was .12 (SD = .08, .01–.33). On average, 12% out of all possible connections were identified within the mind maps. The average network density at the end of the course was .16 (SD = .13, .03–.52), increasing by 4% from the beginning of the semester (see Figure 1). Thus, students began to recognize connections and relationships between various factors (e.g., poverty, mental health) contributing to homelessness. Additionally, individualistic rationales and reasons surrounding the cause of homelessness within the mind map dropped from an average of 1.23 (SD = 1.09, 0–3) words per mind map during Time 1 to .62 during Time 2 (SD = .87, 0–2). In contrast, systemic rationales surrounding the issue of homelessness averaged 3.42 words per mind map during Time 1 (SD = 2.73, 0–8), and rose to 4.08 words during Time 2 (SD = 2.25, 0–7). The above suggests that as the course progressed, students began to shift their analysis surrounding the issue of homeless from individualistic causes toward a systemic understanding.

To summarize, critical reflection, as defined by awareness of the root causes of an issue, increased amongst student participants. This manifested

primarily through students reporting an increased awareness of the issue related to broader, structural causes and solutions to homelessness, namely the need for affordable housing.

#### *Student Learning Outcome 4: Civic Engagement*

Students also demonstrated increased civic engagement. While this term can mean many things, students shared specific activities promoting social change in which they began or increased their involvement in, as a result of the course, including having difficult conversations about local social issues, reading the news, engaging in local politics, voting, and volunteering. Students shared that they know more about how to get involved and create positive change around a variety of issues, including homelessness, in the local community. Students articulated feeling more knowledgeable about local issues, which provided them increased confidence in their understanding and afforded them the courage to engage in dialogue and social action. One student articulated this theme in the following manner:

Civic participation [is] definitely really important. After taking this class I’ve definitely scrutinized our City Council candidates a lot more. Even when I talk to my friends about issues surrounding homelessness, I definitely don’t let them get off the hook when they just make blatant statements that doesn’t really have concrete fact to back it up. It has definitely changed my outlook on how I talk to my friends when we do talk about policy.

Since the class engaged local agencies via guest lectures and volunteer opportunities, students could see how their advocacy efforts might directly contribute to work around homelessness in the community. For example, one student noted:

I feel like since taking this class I’ve been really trying to follow what’s going on and really trying to advocate and seeing what I can do to help or volunteer or go to the City Council meetings. I feel like that kind of sparked a little.

Retrospective surveys corroborated focus group findings that student confidence level in taking action improved, with students reporting a mean score of 2.69 (SD = 1.25, 1–4) to the survey

item, “I know how to get involved to promote positive change surrounding homelessness” prior to taking the course. This mean increased to 4.31 (SD = .63, 3–5) according to students’ assessments after the course. Additionally, in response to the survey item “Felt inspired to get involved and address community problems,” students reported a mean score 3.62 (SD = .87, 2–5) prior to the course. At the end of the course students reported a mean score of 4.54 (SD = .66, 3–5).

*Student Learning Outcome 5: Identifying Preconceived Biases/Changed Mindsets*

The final theme illustrates that students reflected on their own preconceived biases around the issue of homelessness in many ways, including considering what homelessness looks like, and what needs and services exist or are needed. They also exhibited a heightened awareness of assumptions and biases regarding homelessness held by others.

The findings indicated that students felt that they had gained knowledge and information about the complexity of the issue of homelessness and the challenges of finding solutions such as: the provision of social services, affordable housing, access to public bathrooms, and basic needs. Students clearly expressed that the knowledge and information gained had made them more empathetic and understanding toward the homeless.

Students were honest and forthcoming about their personal biases regarding the homeless, as demonstrated in sentiments such as:

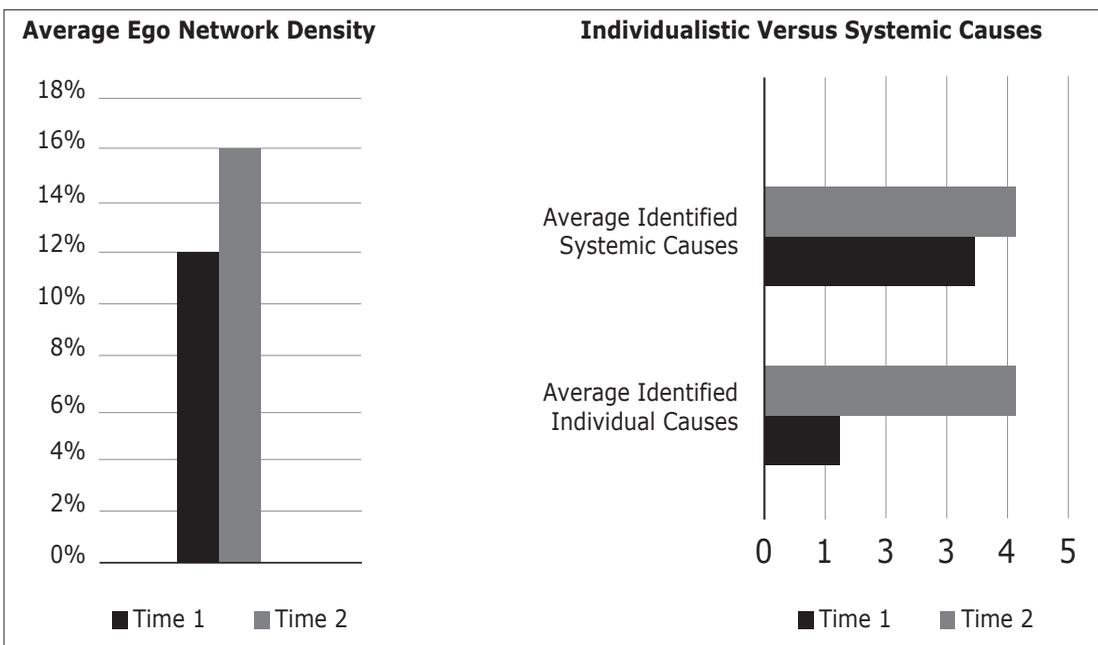
It was definitely a real learning experience, actually going out there and meeting these people that have been caricatured and stereotyped and discovering that it really isn’t a stereotype but it’s really this complex aggregation of issues.

Another student candidly admitted that he had been homeless at one time, and shared:

I had formed some opinions that I don’t think I realized I had. I had a support system and I got out of it, but I think I had formed some views, like ‘it’s not that hard, I did it.’ I don’t think I realized I had formed some of those views, so I think it was talking to people and hearing their stories.... It was easier for me because I had that support system...having it there for me to consider, I think, was kind of a big deal.

Additionally, hearing the personal stories of living without a home altered students’ understanding of the issue, as expressed in this reflection:

**Figure 1.** Network Density Over Time



I was talking to this guy, and he was saying, 'I have to time when I go to the bathroom, because certain places are open.' I knew that we had public restrooms, but I didn't know that they had closed during certain hours, which is, like, really surprising to me. It gave me a lot of insight, just hearing some of the things that they have to deal with that I've never thought of before.

Students also gained an appreciation for the diversity of the homeless population. For instance, one student shared:

I didn't really know much about homelessness and what it even looked like. Like someone living out of their car.... It was a really important class for me to take because I gained a lot of insight on that problem.

Connected to the theme of civic engagement, this deeper understanding of the issue was both informative and motivating, as expressed by one student who said:

I learned a lot about my beliefs and it strengthened how passionate I am about working with the homeless community. But it also gave me an idea of what the other side thinks. And, that what they think is valid too.

Focus group narratives and retrospective survey outcomes converged around changed mindsets. In terms of this final theme, mean scores in reflecting on the statement, "I am more informed on the issue of homelessness" increased from 3.08 (SD = 1.26, 1-4) to 4.78 (SD = .44, 4-5) demonstrating an increased understanding of the issue.

Through the course, students gained new knowledge and insights by virtue of both the opportunity to work in interdisciplinary groups and the application of course content to the real world. They critically reflected on their personal biases and those of others, as well as their own power to impact issues in their community and more broadly. This gave them confidence to engage in direct social change work within the local community (see Table 1).

### *Discussion of Findings*

Based on the literature regarding how CBPR and interdisciplinarity positively affect multiple student learning outcomes, we expected the combination of these pedagogies to be especially impactful for student learning. Results from multiple student assessments described previously bear this out. Using focus groups, retrospective surveys and concept maps, we identified five student learning outcomes influenced by the combination of interdisciplinary teaching and CBPR. Not surprisingly, previous research on interdisciplinary teaching shows that this pedagogy develops students' ability to work collaboratively in interdisciplinary groups (Mahoney & Brown, 2013). Our research corroborates this finding and suggests that pairing interdisciplinarity teaching with a problem-based project, like the CBPR project undertaken in the class discussed, likely raises the stakes of working collaboratively in interdisciplinary groups, boosting the development of this skill. Students in the focus groups mentioned the challenges of working on a major project in interdisciplinary groups, and explicitly identified this as one of the primary opportunities presented by the interdisciplinary and CBPR course.

Based on focus groups and retrospective surveys, we also found that combining interdisciplinarity and CBPR provides students with the ability to apply knowledge and skills learned in the classroom to real-world issues. This finding substantiates findings from previous research showing that interdisciplinary and CBPR classes support the development of research skills (Dunbar et al., 2013; Dutton et al., 2015), and increases understanding of local, social issues (Dunbar et al., 2013; Strand et al., 2003). Our findings suggest that the combined pedagogies allow students to apply knowledge from classes, beyond just research skills, to a real-world problem, thus giving students an increased sense of relevance in their educational experience.

The third student learning outcome identified in our results is critical consciousness (i.e., critical reflection), a concept not extensively studied in previous research on interdisciplinarity and CBPR at the undergraduate level. While critical reflection has been identified as a learning outcome for community members engaged in CBPR (Castelden & Garvin, 2008), graduate students (Kumagai & Lypson, 2008), as well as undergraduate students engaged in service learning programs (Rosenberger, 2014), it has not been explored in

**Table 1.** Retrospective Survey Results

Items	Pre				Post			
	Min	Max	Mean	SD	Min	Max	Mean	SD
Student Learning Outcome 2: Real-World Application								
Knew how to conduct research to inform my community	1	4	2.08	.86	3	5	3.92	.49
Student Learning Outcome 3: Critical Consciousness								
Understanding the complexity of addressing homelessness in Chico	1	5	2.62	1.50	2	5	4.31	.85
Student Learning Outcome 4: Civic Engagement								
Knew how to get involved to promote positive change surrounding homelessness	1	4	2.69	1.25	3	5	4.31	.63
Felt inspired to get involved and address community problems	2	5	3.62	.87	3	5	4.54	.66
Student Learning Outcome 5: Identify Preconceived Biases								
Informed on the issue of homelessness	1	5	3.08	1.26	4	5	4.78	.44

the context of an undergraduate CBPR course, or one that combines CBPR with interdisciplinary teaching. The idea that critical consciousness could be fostered in an undergraduate, interdisciplinary, CBPR course is suggested by Rosenberger (2014) in recommending service-learning classes build course content around identified needs in the community. This manuscript uniquely and constructively contributes to this literature by providing systematic evidence of a practice that increased critical consciousness among students. The opportunity to develop the critical consciousness of undergraduates through a CBPR or CBPR in combination with an interdisciplinary course is important, as research suggests that college may be a time when students are most likely to encounter opportunities to gain knowledge concerning social injustices and inequities (Reason, Roosa, & Scales, 2005).

Research stresses that consciousness development differs based on students' relationship to the content area in the domains of power and privilege (Kornbluh, Collins, & Kohfeldt, 2019; Mitchell & Donahue, 2009). This research has been explored in relationship to issues of racism. However, students who are housing secure may also differ in their consciousness development as compared to students who have experienced housing insecurity. Future research would benefit

from exploring critical consciousness development in relation to housing status.

We also found that the interdisciplinary and CBPR course increased student ability, willingness, and interest in being civically engaged with the issue of homelessness. This finding upholds extensive research showing that interdisciplinary teaching increases civic engagement (Mueller, Juris, Willermet, Drake, Upadhyay, & Chhetri, 2014), that CBPR increases civic engagement (Strand et al., 2003), and that the combination of these pedagogies increases civic engagement (Dutton et al., 2015; Dunbar et al., 2013; Lambert-Pennington et al., 2011).

Finally, our research highlights a second student learning outcome unique to interdisciplinary and CBPR courses—a student's identification and awareness of their preconceptions and biases. In both focus groups, students reported an enhanced understanding of homelessness that led them to be aware of their preconceived notions and stereotypes projected onto individuals experiencing homelessness. This is especially notable, as developing the practice of critical reflexivity (i.e., identifying preconceived biases) by exposure to diverse disciplines and community knowledge, as well as employing strategies to address these biases (e.g., seeking data to inform decision-making) may be a beneficial

practice in bolstering informed citizenship as well as civic development (Eveland, 2004). Additionally, this finding complements trends in service learning away from traditional, more voluntary models, toward critical service-learning models (see Mitchell, 2008) that incorporate, among other practices, close collaboration with community partners to identify community issues and needs (e.g., Brown, 2001), a best practice of CBPR.

## Conclusions

While findings show significant and positive impacts on student outcomes, the course also presented challenges. Students struggled with the uncertainty of disciplinary roles in the group project, as well as the messiness and lack of organization inherent in CBPR. Additionally, the time commitment in planning and implementing the interdisciplinary CBPR course was much more than that of a traditional course, an issue that has been well-documented (Jung, 2017; Letterman & Dugan, 2004).

Several lessons for future iterations of the course emerged from these challenges. First, roles in the group project should be clearly articulated, with each discipline having a specific role, and individual students fulfilling specific tasks. Providing activities to foster group norming, providing students with the opportunity to assess and identify their own strengths and weaknesses when engaging in group work, as well as providing low-stakes opportunities for collaboration and relationship building may be key processes to creating a strong foundation for conducting a CBPR project (Bourner, Hughes, & Bourner, 2001). Second, community collaborations could be strengthened by making the output more readily accessible and having students present their results to community members. Furthermore, community members could be involved earlier in the course to support topic identification, course design, and utilization of findings. Lastly, 10.9% of college students within the California university system in which the course was taught report being homeless within the last 12 months (Crutchfield & Maguire, 2018). We witnessed greater burden placed on students who had experienced homelessness, or who had had more experience with this population (primarily social work and community psychology students), in having to counter stereotyped narratives surrounding homelessness discussed by their peers. Instructors should be mindful that students occupy diverse backgrounds and

experiences when facilitating CBPR projects around social issues and community inequities. Mitchell and Donahue (2009) stress the following instructional strategies to reduce the burden on students who have experienced housing insecurity that have to use their own lived experiences as learning experiences for their more privileged peers: 1) offer exploration around root causes to avoid victim blaming, 2) follow-up with critical questions to challenge assumptions, 3) provide opportunity to explore and engage in data collection within privileged communities (i.e., raising awareness around housing insecurity), and 4) scaffold critical conversations to involve opportunity for instructor discourse one-on-one with students or with groups of students. We also found relaying information surrounding the prevalence of housing insecurity among college students early and frequently in the course can promote a more reflective and thoughtful classroom environment.

There were several limitations regarding data collection restricting the generalizability of the results. Students volunteered to participate in focus groups and retrospective surveys, thus yielding a potential sampling bias. Highly engaged and civically inclined students who enjoyed the course may have been more likely to participate in post data collection.

Future research would benefit from examining the long-term effects of these courses on students' civic development. Additionally, further research ought to examine differences in student learning outcomes in relation to pedagogical instruction type. This could include an experimental design of four conditions—control, interdisciplinary teaching, a CBPR course, and an interdisciplinary CBPR course—to further tease out differences in outcomes. Lastly, investigation into the social issue selected and methodology utilized for the community-based research project could further the field's understanding of the applicability of the practice across a variety of social issues.

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### About the Authors

Mariah Kornbluh is an assistant professor in the Department of Psychology at the University of South Carolina. Jennifer Wilking is the associate chair and international relations coordinator in the Department of Political Science and Criminal Justice at California State University, Chico. Susan Roll is professor and director of the School of Social Work at California State University, Chico. Lindsay Banks is the clinical research coordinator for psychiatry in the Wellness Institute for Neurosciences at the University of California San Francisco School of Medicine. Hayley Stone is on the staff of the North State Planning and Development Collective at California State University, Chico. Jessica Candela is a project specialist at Housing Tools in Chico, California.