Engaging Undergraduates in Co-curricular Community-based Research: Strategies for Success

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ABSTRACT

This paper uses a case study of a co-curricular community-based research (CbR) program for undergraduates at a regional comprehensive university to identify five strategies to success in implementing such a program: prior planning, appropriate projects, student ownership, program structure, and teaching students to find resources. We address the strengths and limitations of CbR programs, provide recommendations for community engagement through research, and address opportunities and challenges of CbR programs for involving students in their communities.

Keywords: undergraduate research, community engaged learning, university community partnerships, civic engagement

Previous research has documented the importance of community-based service and research for improving college graduates' civic-mindedness (Einfeld & Collins, 2001; Strand et al., 2003). Yet much of what we know stems from research on community engagement within academic courses. In this paper, we use a case study of a co-curricular community-based research (CbR) program at a regional comprehensive university to discuss opportunities and challenges in implementing such programs for undergraduates. Through our discussion, we aim to guide the implementation of co-curricular CbR programs at other colleges and universities.

Prior research on community engagement programs for college students focuses on either service learning or CbR. In an overview of prior research on the effects of service learning on students, Eyler et al. (2001) note that service-learning programs contribute to positive personal growth, stronger academic skills, and an enhanced sense of social responsibility. More recent studies support these findings, showing that service learning can increase students' self-esteem, grades, satisfaction with school, civic-mindedness, and community involvement (Celio et al., 2011; Choo et al., 2019; Mayer et al., 2019; Prentice & Robinson, 2010; Simons & Cleary, 2006; Yorio & Ye, 2012). The university discussed in this case study has hundreds of community partners who provide service-learning opportunities for students, with reports indicating over 100,000 hours of service annually.

A less common approach for community engagement is CbR. Studies on undergraduate research suggest that conducting research helps students develop the skills to solve complex, real-world problems and achieve their academic and professional goals (Masterson, 2017; Miettinen, 2000). CbR provides the additional advantage of engaging students in their communities and providing community organizations with access to research focused specifically on their needs (George et al., 2017; Rosing & Hofman,

2010). Despite these potential benefits, CbR programs have been substantially understudied (George et al., 2017).

CbR is often part of formal coursework, as in Rosing and Hofman's (2010) case study in which students in specified courses worked on a CbR project. Based on the case study, they recommended that CbR programs work with campus-based centers, engage students in reflective conversations, and negotiate with organizations to determine realistic goals. Co-curricular CbR programs offer unique benefits and challenges. The scant research on the latter type of program suggests that engaging in multi-semester, co-curricular CbR work strengthens students' communication and research skills, interest in their education, and appreciation for the role of research in solving social problems (George et al., 2017; Keen & Baldwin, 2004; Owen et al., 2019). Given the relative lack of research on co-curricular CbR programs, this paper discusses a case study of one such program that the authors helped create and implement as faculty advisors at a large regional comprehensive university.

BACKGROUND

Our CbR program was part of the community research branch of the university's community engagement center. We aimed to expand opportunities for students to collaborate with community partners to design and implement research projects over an academic year (see Table 1 for details). By the end of the program, students would be able to use empirically sound research methods to design and implement a CbR project, draw upon their experiences to reflect on civic engagement, effectively and professionally communicate, and recruit student volunteers to participate in CbR. The first author served as an advisor in the program from its inception in 2014 through 2019, and the second author served as co-advisor from 2015 through 2018.

The impetus for reconsidering the design of our CbR program occurred when one of our students collected survey data but failed to complete the analyses and report for the community partner by the end of the semester. While other studies note that university centers can provide a "safety net" in such situations (Rosing & Hofman, 2010), our university's center had neither the personnel nor other resources to provide such support. This prompted discussions about how faculty advisors in a co-curricular CbR program can successfully facilitate student-community research collaborations without the safety net provided by a university center. Drawing on our experiences as co-advisors in the program, we recommend the following strategies: (1) in-depth prior planning, (2) choosing appropriate projects, (3) ensuring students' ownership, (4) providing structure, and (5) teaching students to seek additional resources. Identifying and understanding these strategies will be a useful starting point for other institutions looking to develop, implement, and improve their own CbR programs.

The Five Strategies

Strategy #1: In-depth Prior Planning

Programs involving undergraduates in co-curricular research activities require recruiting students with specific skills, which highlights the need for rigorous yet attainable recruitment, application, and selection procedures. This process differs from curricular CbR where students enroll in a class requiring participation, which may result in students who are less involved and invested in their projects (Rosing & Hofman, 2010). Initially in our CbR program, we began recruitment for the coming academic year at the end of the previous spring semester. To increase our applicant pool and provide more time to plan projects, we moved recruitment to early spring. While we identified students through our courses, recommendations from other faculty across campus, and campus-wide advertising, our students tended to be juniors and seniors in majors within our respective colleges of social sciences and education (e.g., psychology, child and family studies, sociology, health promotion, and criminal justice).

Table 1. *Community Research Team History*

Academic Year	Student Selection	Number of Students	Incentives for Students	Faculty Involved	Faculty Incentive	Types of Projects	Types of Community Partners
2014-2015	October 2014	4	$400 tuition waiver / semester	1 Health Promotion Human Performance 1 Criminal Justice	Fall semester: Small monetary stipend. Spring semester: 1 course release	OS NA	City government University
2015-2016	Spring 2015 for Fall 2015	4	$400 tuition waiver / semester	1 Child and Family Studies 1 Criminal Justice	1 course release each semester per advisor	OS SWOT LR	City government K-12 charter school Local non-profit Local police department
2016-2017	Spring 2016 for Fall 2016	6	$450 tuition waiver, and 3 upper-division elective credits waiver / semester	1 Child and Family Studies 1 Criminal Justice	1 course release each semester per advisor	OS S SWOT FG	City government K-12 charter school Local non-profits Local police department
2017-2018	Spring 2017 for Fall 2017	6	$450 tuition waiver, and 3 upper-division elective credits waiver / semester	1 Child and Family Studies 1 Criminal Justice	1 course release each semester per advisor	FG OS SDA	County health department Local non-profits Local police department

Types of Projects: OS – Participant Opinion Survey, S – Participant Survey, SWOT – S.W.O.T. Analysis, FG – Focus Groups, SDA – Secondary Data Analysis, LR – Literature Review, NA – Needs Assessment Survey.

After the application deadline, we reviewed applications and conducted in-person interviews to assess students' potential for success in the program. The dynamic nature of CbR requires students to be flexible thinkers who take initiative to solve problems on their own (Jacoby, 2013). Thus, we began focusing more heavily on soft skills in addition to grade-point average and research methods or statistics courses. Ultimately, students whom we accepted into the program demonstrated their professionalism, interest in research, motivation for community engagement, critical thinking, time management, and organizational skills. Being able to select students in this way mitigated one challenge of curricular CbR where faculty manage whomever enrolls in the course (Goertzen et al., 2016; Rosenberg et al., 2016). In our experience, selecting students who demonstrated specific skills dramatically improved how our students interacted with community partners, their abilities to take full responsibility for their projects, and the quality of their final reports. The co-curricular design also allowed students to continue in the program by going through the application and interview process each year.

All CbR students must spend time on their projects outside of class, but a co-curricular program requires more time commit-ment than typical coursework. To address this issue, we initially offered a small tuition waiver. When that was not sufficient, we added upper-division, elective course credit in which we identified faculty who agreed to serve as the instructors of record for pre-existing directed readings courses within each student's major or minor. At the end of each semester, each student earned a letter grade based on grading criteria outlined in our program's syllabus. The additional incentive of course credit improved the applicant pool and helped students prioritize their projects over extracurricular activities. Offering credit shifted the program more toward a curricular model of CbR, but the program continued as a co-curricular activity rather than a formalized course. This structure differed from internships or field placements in that students did not provide direct service to or spend time with clientele at their research sites. Our program also offered opportunities to continue beyond a single semester.

Strategy #2: Choose Appropriate Projects

For undergraduate researchers in co-curricular CbR programs to be successful, they must be presented with feasible projects (e.g., narrow scope, appropriate complexity) that include a community partner willing to be a co-educator. To identify potential projects, each spring semester we asked our university's community engagement center to email a call for proposals to community partners, asking them to complete an online survey identifying their research needs and deadlines for completion. These calls usually resulted in one or two more applications than we had capacity for in the program, so we drew on our prior experiences to develop informal guidelines for project selection.

First, projects had to be attainable given the scope, timeframe, and complexity of the requested research. Early on, we managed projects that included surveying large populations (e.g., a public opinion survey for city government). When these became unmanageable within a one-academic-year time-frame, we looked for projects with narrow scope or a scope that could be narrowed in collaboration with partners. For example, we chose projects that addressed questions related to the effectiveness of a program to increase fathers' involvement in children's literacy (secondary data analysis of program data), parental attitudes toward sexual education programs (online survey), community perceptions of local police (in-person survey), and barriers and concerns among African Americans about healthcare access (focus groups). After working with the students and community organizations to determine a research question that would meet the needs of the organization and the CbR program, we used our extensive knowledge of and experiences with both quantitative and qualitative methods to guide

the team toward the most appropriate method to answer their research questions.

Choosing appropriate projects also required realistic goals that accounted for the time available for data collection in a student-led CbR program (Rosing & Hofman, 2010). Thus, we evaluated proposals for realistic deadlines and the complexity of the skills required to complete the project. For example, our program aimed to provide opportunities to conduct research projects from start to finish. Because undergraduates generally do not possess the skills for quantitative analysis beyond that covered in introductory statistics courses, we tended to choose studies involving small-scale surveys, basic statistical analyses, and focus groups. In short, we chose projects that were realistic and feasible for students to complete within the academic year.

Finally, we assessed community partners' willingness, capacity, and motivation for collaboration throughout the project. Other studies have shown the importance of the community partner's engagement (Owen et al., 2014), and this aspect of project selection became important for us after some early experiences in which community partners did not fulfill their collaboration responsibilities. For example, a couple of community partners became unresponsive to student contact and refused to meet with the assigned students, preferring instead that the students just do the project and report results. Another project began as a strengths, weaknesses, opportunities, and threat (S.W.O.T.) analysis for a K-12 charter school but revealed an undisclosed goal of surveying current and past students, parents, and community members. These situations directly conflicted with the goals of our program, and they mirror others' reports that community organizations may be more invested in the final product than in students' learning (Rosing & Hofman, 2010).

Thus, in the call for proposals, we began asking partners to list personnel and/or monetary resources they could dedicate to the project. As we assessed potential projects, we emailed each organization's contact person to obtain written confirmation of their commitment to maintaining regular contact and meeting at least monthly with our students. When we notified them that their project had been selected, we also included the deadlines for our students' work so the community partner could track their project's progress. After implementing these steps, we had no other experiences with unresponsive partners.

Strategy #3: Ensure Student Ownership of Projects

CbR involves a commitment to community partners to complete high-quality research within an agreed upon timeframe (Rosing & Hofman, 2010). One major question is who is responsible when students fail to finish a project. Our program was part of the university's community engagement center, yet the center had no funding to assist with completion of projects. We had obligations to both students and community partners, so we increased the chances of success by focusing on student ownership of their projects. We emphasized student leadership in meetings with community partners, and we used low-stakes assignments (e.g., develop a research question, complete various steps in collecting and analyzing data) to facilitate learning and keep students on track to successfully complete their projects.

Students learn more through failures than successes (Dewey, 1938; Miettinen, 2000), and this guided our decision not to grade assignments but rather provide feedback and allow students to revise as many times as necessary. For example, we required students to submit an IRB proposal at the end of fall semester. We provided an example proposal and some support, but mostly required students to find information on their own. The first drafts often needed much revision, but by "failing" in a safe environment, they had a stronger final product to receive IRB approval, and they strengthened their problem-solving skills. These types of low-stakes assignments allowed students space to "fail," helped them learn about research, and increased their sense of ownership of their projects.

Over time, we also developed strategies for helping students understand the importance of their projects and develop rapport with their community partners. For example, rather than plan the research before-hand as in some course-based CbR projects (e.g., Rosing & Hofman, 2010), students collaborated with community partners to plan the project. Before the semester started, we met with students to discuss the projects for the year and communicate expectations. Stu-dents reviewed proposals, learned about the organizations, and received the syllabus as part of this meeting. Initially, we assigned students to projects; however, we noticed that some of them lacked excitement about their projects and expected us to do more of the work than was appropriate for an advisor. After we shifted to having students work as a group to determine who would work on which projects, we saw students excited about and committed to working on their projects even during stressful periods such as midterms and finals.

We also adjusted requirements for meetings with community partners. At first, we did not regulate the frequency of students' meetings with community partners. This created a disconnect where students and partners deferred to advisors instead of problem-solving first on their own. We addressed this problem by requiring students to meet with community partners at least once per month. After each meeting, students submitted a meeting reflection and then, as a team, we brainstormed solutions to any issues that had come up during the meeting. Finally, each student took responsibility for relaying updates to partners and implementing the agreed-upon solutions. Through this process, students grew into their roles as experts on their projects, built rapport with community partners, and had more investment in completing their projects.

Strategy #4: Structure Students' Experiences

Undergraduate students often underestimate the efforts required to design and implement a research project in collaboration with a community partner, leading students to produce lower quality work as they feel constantly behind. To alleviate some of this pressure, we used tools from a curricular structure (e.g., a syllabus, peer support, and collaboration) in our co-curricular program. Initially, we asked students to devote seven hours per week to their projects, but then moved to a minimum of 10 hours per week. When coupled with a stipend, course credit, and a syllabus, students improved at managing their time and our expectations.

While faculty expectations of students must be clearly laid out and accounted for in any course-like structure, the unique relationships formed between students and community partners in our CbR program also required managing expectations. To set realistic expectations about what students could achieve in a semester, we sent the syllabus to community partners. Having a single syllabus for all students in the program also encouraged collaboration between students working on different projects. Multi-course CbR projects need a single faculty point of contact and regular meetings with students, community organizations, and faculty members involved in the research (Rosing & Hofman, 2010). We facilitated these connections by having students' projects united under a single syllabus and by requiring weekly meetings with us and the student team as well as monthly meetings with community partners.

After implementing the syllabus, we saw an increase in collaboration among peers to complete their weekly tasks. Despite working on projects with different research questions, methodologies, and community partners, they frequently discussed the assignments, shared examples and templates, and asked and answered questions about their individual projects before involving advisors. The common goals in the syllabus facilitated these interactions, which in turn strengthened the students' connections to each other. In addition to providing a single syllabus, we integrated peer support into the program through three 'retreats' per academic year

(summer, fall, and winter). The retreats introduced students to the program, and facilitated rapport, cohesion, and motivation within the group. During the fall retreat, we focused on students getting to know advisors, each other, and the program. The subsequent retreats served as reflection periods for students to discuss what they accomplished, what they would have changed about their work, and their plans for the future. By the end of these retreats, students appeared more energetic, motivated, and passionate about implementing their projects.

Strategy #5: Teach Students How and When to Seek Out Resources

One of the most important parts of a CbR program is teaching students to use the skills they have learned to successfully complete their projects. In our program, we helped students develop awareness of who and when to ask for help by teaching them to use resources on campus and in the community. On campus, we taught students to mobilize their peers as volunteers for time-consuming tasks such as data collection, literature reviews, and transcribing. Students recruited volunteers by creating and posting flyers around campus, emailing professors, and visiting courses that required community engagement. For example, one project involved 32 student volunteers for door-to-door surveying. CbR students recruited, trained, scheduled, and supervised volunteers. In their training, volunteers received an over-view of the materials and best practices in surveying, as well as advice on personal safety and practice interacting with potential respondents.

As faculty advisors, we had training in a variety of research methods and substantive areas, but students inevitably had questions about elements of their project that required outside expertise. In these situations, we taught students how to research the topic and identify people on campus with relevant expertise. For example, in the project that used focus groups to study African Americans' barriers to accessing healthcare, the CbR student contacted a faculty member in the communications department who had ties to the community and experience with this research method. Teaching students to seek out resources in this way helped them answer their own questions and connected them with a network across campus.

Off campus, community partners provided multiple resources for their projects, sometimes including monetary support, but more often knowledge about the target populations and community. For example, the project mentioned above needed to recruit African American participants in a predominantly white state with a predominantly white research team. The community partner had extensive ties to local African American communities, and the student's contact assisted in recruiting participants and finding an appropriate moderator. Through problem-solving in situations like these, we taught students the value of seeking help.

DISCUSSION AND CONCLUSION

Using these five strategies for success, our CbR program engaged students and community partners in the research process. Through their guided collaborations, both groups experienced the process of conducting research to solve problems, including generating research questions, identifying and implementing appropriate methods, and analyzing and reporting results. Our students told us multiple times that they learned more about research in our program than they ever had in their research methods courses. Through report-writing and presentations at local, regional, and national conferences, our students also demonstrated that they had gained valuable skills in professional oral and written communication.

The many benefits of CbR highlight the importance of doing this type of work; however, all programs have limitations. First, we never had time in our work to help community organizations develop initial project ideas. Second, co-curricular CbR programs

require convincing students to apply for the program. Our program garnered fewer applicants than service-based programs. To find out why, we conducted informal, small-group conversations with students. We learned that they liked the immediate intrinsic rewards of traditional service opportunities. For instance, volunteers who help build a house can physically see their accomplishments. By contrast, door-to-door surveyors interact with people who might not be interested in participating, collect a few surveys, and then turn over the data without seeing the impact of their efforts. We suspect that this difference contributed to fewer overall applications for our program and fewer volunteers to help conduct the research. Integrating community partners can help to show students the value of their work. For example, one of our community partners hosted a volunteer appreciation banquet at the end of the semester. Over lunch, the head of the organization and a few mid-level managers distributed certificates of appreciation to the volunteers and discussed how they planned to use the survey data. Not all organizations have the resources for this kind of event, but these types of activities may help motivate students to volunteer for research opportunities despite their general lack of familiarity with research.

While the resources, community ties, and student population for our program may be somewhat unique to our region, the strategies we have outlined in this article will help others who are planning co-curricular CbR programs (and perhaps similar specialized courses such as capstones or senior seminars) to avoid some of the challenges we experienced as we built our program.

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