Creating a Service-Learning Concentration in Environmental Science: Lessons Learned

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ABSTRACT

This project outlines a four-course service-learning concentration within an environmental science or environmental studies degree at Suffolk University in Boston, Massachusetts (Suffolk). Service-learning components were developed in the 2018-2019 academic year with the help of a grant from the Campuses for Environmental Stewardship Program. The courses were either major required courses or major electives to avoid overburdening students with credits. Fifty-five students were enrolled in the service-learning courses for the proposed concentration in the 2018/2019 academic year at Suffolk. An evaluation (pre/post surveys with 58% response rate) found that students left the term feeling more confident in their communication and teamwork skills, better understood community partners' needs through their partnerships outside of the classroom and, fel that they would take other service-learning courses given the opportunity. Obstacles for the participating faculty members including additional time inputs, added stresses of administrative paperwork, and the need for a continued financial support to over the service component of the courses on a regular basis did arise.

INTRODUCTION

Service-Learning

The concept of service-learning is not new: Jane Addams formed the social settlement Hull House and, in her 1904 essay *The Humanizing Tendency of Industrial Educatio*n, suggested that a businessman could teach an immigrant English and arithmetic skills while receiving in return lessons in how to handle tools. She further suggested that Italian women could learn English while teaching American women how to cook (Addams, 1906). John Dewey, who partnered with Addams from a local university, is considered the forefather of the service-learning movement (Giles, 1991; Saltmarsh, 1996; Daynes and Longo, 2004), which is centered on community-campus partnerships for action. This connection between university campus and the surrounding community has transitioned to a more engaged model in which both partners co-create solutions to problems (Fitzgerald et al., 2012). Service-learning is deeply rooted in community action and student reflection (Eyler and Giles, 1999), but is "not volunteerism, community service, internships, or field education" (SERC, 2018). While some of these other forms of education do provide experiential learning, service-

learning has equal parts in both learning and service goals and, thus, combines many different forms of both pedagogy and non-academic learning methods.

Service-learning resurged at the end of the twentieth century when many felt that higher education had drifted too far from its public purpose and teaching mission, specifically in the preparation of students as productive citizens (Boyer, 1990). Many college and university mission statements purport a commitment to social purposed, yet many higher education's efforts to address current and important societal needs did not occupy a prominent role in academia (Votruba, 1992). Thus, a call for renewed emphasis on the quality of student experience; a broader definition of scholarship-based teaching, research, and services; implementation of true university-community partnerships based on mutual benefits; and an intentional focus on the resolution of wide range of social problems was placed (Ramaley, 2000; Fitzgerald et al., 2012). Such a call has required higher education institutions, if interested in service-learning, to restructure their pedagogy, teaching integration, scholarship, service missions, and reward systems (Fitzgerald et al., 2012).

Citizen science is a form of service-learning that has engaged an increasing number of academic researchers in the last decade (Kullenberg and Kasperowski, 2016). Perhaps the most well-known citizen science project in the natural sciences is that of the Cornell Laboratory of Ornithology, which engaged thousands of individuals (i.e., non-scientists and scientists alike) in collecting and submitting data on bird observations (Cohn, 2008). Citizen science as a term was not used in the literature until the 1990s and has been extended to a broad term including volunteer contributions consisting of observations, classifications, data collection, etc. that can be used by scientists (Cohn, 2008). Synonyms for citizen science include community-based monitoring (Danielsen et al., 2005), volunteer monitoring (Shirk et al., 2012), and participatory science (Ashcroft et al., 2012), all of which designate the contribution of non-scientists to (primarily natural) science (Kullenberg and Kasperowski, 2016).

Service-learning is a cyclic way of teaching in which students are constantly applying classroom knowledge to community problems/projects and reflecting on what they learn to further their objectives for their community (Eyler and Giles, 1999). This also allows for a great deal of student self-reflection which, while beneficial for the student's growth, can at the same time increase their retention of classroom material. Implementing service-learning (inclusive of citizen science) in an undergraduate classroom is founded in the knowledge that not all expertise resides in the academic institution where a student obtains a degree. Both expertise and excellent learning opportunities in teaching as well as scholarship can be found in non-academic settings (Fitzgerald et al., 2012). Further, many social issues require multi-disciplinary approaches for problem-solving and incorporating local stakeholders often aids in fast results that academic solutions alone. An added bonus of service-learning opportunities is the outcome of the project. In addition to serving a community and a heightened understanding of local needs, the scholarship outputs in service-learning classrooms moves away from products (i.e., publications) and into impact (Fitzgerald et al., 2012).

While service-learning is built upon important ideals of community and campus engagement, the implementation of such programs is not without difficulty. University education is built upon time limitations. Students take classes in certain credit hours, courses are offered in certain terms, final examinations are required in a certain period of time, and a certain number of credits in very specific disciplines is required for graduation (Dayes and Longo, 2004). The university-based time constructs are limiting to service-learning projects. Faculty must determine the number of engagement hours to be spent in and out of the classroom and the outcomes of the project generally are limited to one semester. This creates difficulty when trying to forge long-term relationships with a community partner since students must cycle through a short-term project (Wallace, 2000). In order to overcome the burden of time at a university, students can be encouraged to continue a relationship with a community partner after the course is over, but this is only possible for truly engaged students who (a) have time and (b) want to continue with a partner when no course credit is offered. A second difficulty in university-based service-learning is that of faculty time and content. University faculty are pulled in several directions including service to the university, scholarship, and of course teaching loads. Typically, service-learning projects require extra time for the faculty member (i.e., community partner development, project ideas, class trips outside of the classroom, etc.) and are often not considered as service to their university or scholarship. Boyer (1990) noted that scholarship should be reframed as consisting of discovery, integration, application, and teaching to alter faculty roles such that teaching and service-learning applications were viewed as equal to research. Further, should a faculty opt for a service-learning course, they must then find a community partner and project that fits within the context of their course goals, objectives, and content.

Study Aims: Campuses for Environmental Stewardship

The Connecticut, Maine, Massachusetts, New Hampshire, and Rhode Island Campus Compacts released a Request for Proposals (RFP) in spring 2018 called the Campuses for Environmental Stewardship (CES) program. The CES program aims to engage teams of faculty across disciplines in collaborative efforts to integrate service-learning into the curriculum. The funding for the program was provided by the Davis Educational Foundation and the RFP outlined that 16 degree-granting colleges and universities from Connecticut, Maine, Massachusetts, New Hampshire, and Rhode Island would be chosen from the applicants. The requirements for the grant submission were to incorporate three or four service-learning courses, each partnering with community organizations to address environmental challenges. The four overarching goals of the CES program are to complete service-learning projects in the designated states outlined above, to create and sustain changes in campus delivery for experiential and environmental education, to create a replicable model for interdisciplinary approaches to service-learning, and to improve faculty motivation for service-learning.

Suffolk University (Suffolk) had its beginnings in 1906 when Gleason L. Archer, a young lawyer, opened the Suffolk Law School to serve ambitious young men who are obliged to work for a living while studying law. Since its inception as an evening law school, Suffolk has developed into a university including a law school, a business school, and a college of arts and sciences. The Center for Urban Ecology and Sustainability (CUES) is an academic department in the College of Arts & Sciences (CAS) and houses both the environmental science program and environmental studies program. The focus of the department is on urban sustainability issues, and environmental policy as well as justice issues are key elements of the CUES curriculum. Although the environmental sciences and studies programs have been in existence at Suffolk University as programs in other departments since 1998 and 2004, respectively, the combination of these two programs under CUES makes it a young department (opened in fall 2016). Service-learning is a pedagogy that CUES faculty embrace. Suffolk University offers logistic support for faculty interested in developing and executing service-learning courses through the Center for Community Engagement operated through Student Affairs. Suffolk is well-suited to develop strategic partnerships for community-based service-learning projects because of its location in Beacon Hill in the heart of Boston. CUES has never attempted or obtained a CES award before. However, members of the department have performed service-learning projects via other venues.

The purpose of this study was to create a suite of four service-learning courses within the CUES curriculum as a service-learning concentration. Funds were obtained from the CES program and Davis Educational Foundation to begin the development of the concentration by implementing three of the four courses with a service-learning component in 2018/2019 academic school year.

METHODS: CONCENTRATION DEVELOPMENT

A small grant ($4,500) was obtained from the Campuses for Environmental Stewardship (CES) Program by CUES in spring 2018. The grant covered bus transportation for one course into a field site, costs for students to print their final projects for one course, and small stipends for three faculty members, each responsible for implementing service-learning into their classroom as well as one administration assistant to liaise between the university and the funding institution.

A suite of four courses were considered as the basis of a service-learning concentration within CUES. All four courses count for students in the major as either a required course or elective so there is a way for students to scaffold in the concentration without taking extra courses. Three of the four courses for the proposed concentration were in already part of the curriculum but did not have a service-learning component. The fourth course was a new course developed for the service-learning concentration. Two of the four courses received a service-learning designation by the University Service-learning Committee in 2018 and remaining two will be submitted in 2019-2020. The first course is an entry-level course that all CUES majors (Environmental Science

or Environmental Studies) must take whether they opt into the concentration or not. The course, *Environmental Studies*, is a four-credit course that focuses on the natural environment through the lens of social science and humanities. This course is part of the undergraduate core as a human and behavioral science course. Through the course, students investigate the policy-making processes and institutions through which those issues are decided, and the social inequalities in the distribution of environmental problems. *Environmental Studies* has always been offered through the CUES curriculum, but in fall 2019, the course was taught with a service-learning component and students were also able to interact with their community. The instructor for the course chose a local community service partner, St. John's Elementary School, to work with throughout the semester. The students in the course worked with elementary school students to educate them about the urban sustainability and the environment. Each Suffolk student team developed an activity for second grade level students. For example, one group of students created a play with woodland character creatures found in the city to explain how environmental degradation harms them. One group of students designed a puzzle with New England tree species leaves so the elementary school students could learn about native tree species. Students went into the elementary school classroom to work with students face-to-face and to receive commentary from the second grades students on the activities. In addition, the Suffolk students presented their projects in the course to faculty members and graduate students in education and sociology for comment and critique at the end of the semester

The second and third course in the concentration were offered in Spring 2020, and both count as advanced electives for students within the majors whether they opt into a service-learning concentration or not. *Understanding Wetlands Through Citizen Science* was a new 200-level course offered as an elective for non-science majors and Honors students. The community partner for the course was a regional partner – the Neponset River Watershed Association (NepRWA). The first portion of the course focused on wetland ecology including topics such as biogeochemistry, organism adaptations to anoxia, and wetland conservation. After creating a field guide for a local wetland as their midterm in groups, the second part of the semester centered around citizen science. Guest lecturers with local service-learning environmental projects were brought into the classroom to talk to the class, and the students went into a local salt marsh three times over the course of the term along with their professor (whose research is focused on wetlands) and a representative from NepRWA to develop a citizen science protocol. Students were placed into one of four groups with a focus study area (i.e., water quality, sediment quality, invasive species encroachment, physical debris). For example, an invasive species encroachment group developed a protocol to assess the qualities that make an invasion successful, in this case salinity, and then observed how salinity affects plant growth by measuring plant height and density. On the students' final trip into the field, they were accompanied by volunteers (provided by NepRWA) to test their draft protocols. After the students received feedback

from volunteers, they presented their final recommendations and citizen science protocols to NepRWA, the volunteers, and campus administration. The final protocols were also provided to NepRWA for future use with their volunteer base to continue sampling wetlands.

The third course in the concentration was a 300-level course called *The Civilian Conservation Corps and the American Landscape.* This course is associated with a spring alternative spring break (ASB) trip and has run since 2013. The course is limited to an enrollment of 12 students because of the ASB component. In fall 2018, it also obtained as service-learning (SL) course designation through the University Service-learning Committee. The community partner for this course was at the national level: the National Park Service. The foundation of the course is the history, formation, activities, and the lasting impacts of the Civilian Conservation Corps (CCC) in the United States. The course meets only once a week for one hour and fifteen minutes as half of the engagement hours are spent on a spring break trip to a national park. Since the course inception, the students enrolled have travelled to either Prince William Forest Park near Washington, D.C. or the Grand Canyon National Park in Arizona. The trip is fully funded by the Suffolk Center for Community Engagement (CCE) for the students and two faculty advisors apart from a $100 course fee (and normal course tuition). On the spring break trip, the student and faculty advisors engage with park rangers in a variety of activities that help the park and teach the students. For example, in spring 2018 the students went to the Grand Canyon National Park and spent the week collecting plastic debris from the trails. Each day the students met with different park rangers to also learn about the local ecosystem (i.e., condors, invasive plant species, etc.). In this way, the students helped the community and conserve the natural system, but also learned about local flora and fauna from experts in the area versus watching a video or listening to a lecture from their faculty member. Similarly, the 2019 spring cohort went to the Prince William National Park where they spent their time doing a multitude of activities from revitalizing CCC cabins to clearing trails. Because this park was the first park set out by President Franklin D. Roosevelt for the specific use of CCC, the history of the program was much more tangible and relatable to the students than if they had learned about it in the classroom. Students learn firsthand how critical volunteer efforts are in maintaining National Park facilities. In addition to the service work, students were also given a private, Park Ranger-led tour and history walk of the Franklin D. Roosevelt Memorial in Washington, D.C. to emphasize the CCC history in person.

The final course in the concentration was a 400-level capstone course that all environmental studies and environmental science students in the CUES program must take to graduate. In the course, students each either write a literature review or do a laboratory and/or field experiment on a topic of their choosing with either the professor on record for the course or a faculty research advisor. Students opting into the concentration must choose a service-learning project for their topic. The students spend the semester working on their thesis projects and then present them at the end of the term to the department faculty.

RESULTS

The capstone course did run in the spring of 2019, but no students opted for a service-learning project, and no data exists for this course. While 55 total students were enrolled among the other three courses (29 students in *Environmental Studies*, 12 students in *The Civilian Conservation Corps and the American Landscape*, and 14 students in *Understanding Wetlands Through Citizen Science*), only 32 students completed both pre- and post-course evaluations (Table 1).

Table 1. Demographic data for all three courses (n = 32).

	Number (% out of 32)
Female	23 (72)
Male	9 (28)
Environmental science or studies majors	17 (53)
Freshmen	14 (44)
Sophomores	3 (9)
Juniors	5 (16)
Seniors	10 (31)

Approximately half of the students were already declared within either the environmental science or studies majors that CUES offers. Most of the students were female (72%) and freshmen (44%).

The same pre-course survey was given in all three courses in the concentration and helped students check in about their surrounding community, the need for service-learning, and how the course they enrolled in may help them become a stronger part of and help their community (Table 2).

Table 2. Pre-course survey data for all three courses (n = 32).

Question	**Response Number (% out of 32)**				
	Strongly Disagree	**Disagree**	**Moderate**	**Agree**	**Strongly Agree**
I am aware of community needs and concerns.	2 (6)	1 (3)	8 (25)	14 (44)	7 (22)
I feel responsible towards helping others.	0 (0)	0 (0)	8 (25)	12 (38)	12 (38)
My involvement in this class will contribute	0 (0)	0 (0)	9 (28)	16 (50)	7 (22)

positively to the community.					
I am interested in hands-on learning.	0 (0)	1 (3)	1 (3)	15 (47)	15 (47)
I believe working in groups is more effective than working individually.	1 (3)	6 (19)	9 (28)	8 (25)	8 (25)
I think that this class will help me become a better team player.	1 (3)	2 (6)	13 (41)	10 (31)	6 (19)
I think that this class will help me develop leadership skills.	1 (3)	3 (9)	14 (44)	10 (31)	4 (13)
I think that this class will help me develop my communication and interpersonal skills.	1 (3)	5 (16)	6 (19)	15 (47)	5 (16)

The results from the pre-course surveys showed that most students were aware of their community needs, felt responsible for helping their community, and enrolled in one of the service-learning-courses within the concentration in order to contribute to their community in a positive way. 66% of students felt prior to taking a service-learning course in the concentration that they were aware of community needs and concerns and all participants felt moderately, agreed, or strongly agreed that they were responsible for helping others and that the course they enrolled in would help them contribute positively to their community. Other reasons that students may have taken one of the service-learning courses were also posed in the pre-course surveys. 43% of students felt that the course that they enrolled in would help them develop leadership skills and 63% of students hoped the course would help them develop their communication and interpersonal skills. When asked about the different skills that are needed to effectively participate in service-learning (i.e., hand-on learning, working in groups), the results were more mixed. 3% of students were not interested in hands-on learning and 22% of students disagreed or strongly disagreed that working in groups is more effective that working alone. 9% of students felt the course that they enrolled in would not help them become a better team player either (i.e., either strongly disagreed or disagreed).

Students were also given a post-course evaluation at the end of each course/semester to elucidate how the course helped them develop different service-learning skills and to reflect about their feelings on service-learning upon course completion (Table 3).

Table 3. Post-course survey data (n = 32).

Question	Response Number (% out of 32)				
	Strongly Disagree	Disagree	Moderate	Agree	Strongly Agree
I am more aware of my community needs and concerns that I was before taking this course.	0 (0)	0 (0)	5 (16)	12 (38)	15 (47)
I feel more responsible towards helping others than before I took this course.	0 (0)	0 (0)	7 (22)	14 (44)	11 (34)
I have interacted with individuals from communities or background other than my own.	1 (3)	1 (3)	10 (31)	10 (31)	10 (31)
My involvement in the class contributed positively on the community.	0 (0)	0 (0)	7 (22)	14 (44)	11 (34)
I am more interested in hands-on learning than before I took this course.	0 (0)	3 (9)	7 (22)	12 (38)	10 (31)
Taking this class change my attitude towards the people or community that I served.	0 (0)	1 (3)	11 (34)	11 (34)	9 (28)
The class material and/or project was related to community service work.	0 (0)	1 (3)	4 (13)	10 (31)	17 (53)
I was able to reflect on my service experience in this course.	0 (0)	0 (0)	8 (25)	12 (38)	12 (38)

I gained a strong understanding of the course material because of my service experience.	0 (0)	3 (9)	6 (19)	13 (41)	10 (31)
I was prepared for the challenges of service given the training that I received in class.	1 (3)	2 (6)	5 (16)	12 (38)	12 (38)
I learned that working in a group is more effective that working individually.	2 (6)	4 (13)	4 (13)	10 (31)	12 (38)
I can communicate better with my peers and teammates than before I took this course.	1 (3)	2 (6)	8 (25)	11 (34)	10 (31)
This class helped develop my leadership skills.	1 (3)	2 (6)	7 (22)	9 (28)	13 (41)
I am considering taking another service-learning course in CUES.	1 (3)	3 (9)	9 (28)	10 (31)	9 (28)
I am considering taking another service-learning course outside of CUES.	2 (6)	4 (13)	12 (38)	6 (19)	8 (25)
I will advise others to take a service-learning course in CUES.	1 (3)	3 (9)	6 (19)	10 (31)	12 (38)
I will advise others to take a service-learning course outside of CUES.	1 (3)	3 (9)	7 (22)	13 (41)	8 (25)

In terms of community awareness and responsibility, 85% of students agreed or strongly agreed that the course made them more aware of their community needs and concerns, 78% of students agreed or strongly agreed that they felt more responsible

towards their community that before the course, and 62% agreed or strongly agreed that they interacted with individuals, communities and/or backgrounds other than their own in the course, and 78% of students agreed or strongly agreed that they had contributed positively towards their community through the course that they took. Students did overall seem to feel more confident in skills that are needed for service-learning as well. 69% of students were more interested in hands-on learning that before taking the course, 69% of students agreed or strongly agreed that working in groups is more effective than working alone, 65% felt that they had improved their communication skills with their peers and teammates in the course, and 69% felt that the course helped them develop their leadership skills. The post-course survey was also administered to better understand how the courses helped prepare the students for service-learning work and if taking the course changed students' attitude towards taking service-learning courses. 62% of students felt that the course changed their attitude towards the community that they served, 84% felt that the course material was related to their service-learning work, and 72% of students felt that they were able to reflect on their service experience throughout the course semester. Further, 72% of students felt that they gained a strong understanding of the course material because of the service experience and 76% of students felt that the course material prepared them for their service experience. Students were asked to respond to one yes or no question (versus the Likert Scale used above) and 96% felt that the training, material, and community service hours were sufficient for the class that they took. Lastly, 59% of students agreed or strongly agreed that they would consider taking another CUES-taught service-learning course (versus only 44% noting that they would consider taking a non-CUES service-learning course) and 69% of students agreed or strongly agreed that they would advise other students to take a CUES-led service-learning course (versus 66% noting that they would advise other students to take a non-CUES service-learning course).

The post-course survey also queried students to compare the coursework in the concentration to other courses taken and, where applicable, other service-learning courses taken throughout the student's academic career (Table 4).

Table 4. Comparison of coursework within the concentration to other courses students have taken.

Question	**Response Number (% out of total student responses)**					
	Very Poor	**Poor**	**Fair**	**Good**	**Very Good**	**Excellent**
Overall, this course was _____ compared with other non-service-learning courses that I have taken (n = 32).	0 (0)	0 (0)	4 (13)	7 (22)	11 (34)	10 (31)

Overall, this course was _____ compared to other service-learning courses that I have taken (n = 16)	0 (0)	0 (0)	2 (13)	5 (31)	4 (25)	5 (31)
Overall, this course did a _____ job of incorporating service and learning (n = 32).	0 (0)	0 (0)	6 (19)	5 (16)	11 (34)	10 (31)

No participants graded the course that they took as either poor or very poor compared to other courses. 87% of students felt that the class they took was either good, very good, or excellent compared to other non-service-learning courses they had taken and 81% of students felt that the course did either a good, very good, or excellent job of incorporating both service and learning. Only 16 students had taken other service-learning courses prior to the one that they took within the CUES concentration, but 87% of those students felt that the CUES-led course was good, very good, or excellent compared to other service-learning courses that the student had taken.

DISCUSSION: LESSONS LEARNED

The challenges with a service-learning concentration in higher education are not trivial. As previously mentioned, university time constructs, service portfolio limitations for faculty, and time inputs create significant barriers to creating a service-learning course. Further, university-community partnerships require interdisciplinary cooperation and long-term relationships for students to see the benefits of their contributions. Changing a higher education system to allow for solutions to these difficulties demands a more inclusive approach to pedagogy as well as a recognition of the strengths that may lay outside of the classroom and/or faculty's expertise (Fitgerald, 2012).

For example, there is a multi-step approval process for incorporating a concentration into a major at Suffolk University. First, departments have autonomy over individual course offerings, minor structural changes in their majors, but not over major changes in the structure of their majors, concentrations in their majors, or minors offered by their majors. These later program modifications must go through the full academic governance process of the College. Second, a major must be structured so that concentrations are already a part of the major so that additional course credit requirements are not added to the major by the introduction of the concentration. For CUES, this is true for environmental studies program, but not for the environmental science program. The environmental studies major currently has two concentrations (each comprised of three courses from a concentration elective bank): environmental policy and urban environmentalism. In this case, a new environmental service-learning concentration would be a third choice for students and could easily be petitioned for through faculty academic governance. In the case of the environmental science

program, the major curriculum would (1) need to be reworked to house concentrations in general and (2) have the environmental service-learning concentration be approved. At Suffolk, an academic modification like a concentration requires a full proposal to first go to the Undergraduate Curriculum Committee for approval, then to the Educational Policy Committee for approval, to the full Faculty Assembly for approval, and to the Office of the Provost for final approval. With no challenges to the proposal, this process can take a full academic year to win approval of a concentration.

The format of proposals to modify academic program structures has been formalized by the Office of the Provost and includes a nine-point justification of the proposed program modification. This justification includes not only the pedagogical aspects of the proposed academic initiative—in this case, a concentration—but a market analysis, a statement of alignment with University mission and strategic plan initiatives, an analysis on curriculum impacts both internal to the department and external to other departments, implementation timetables, assessment plan, and more. Therefore, getting final College approval on a concentration like service-learning is a intensive process for departments and faculty members and requires a quite sophisticated analysis to contextualize the need for, and potential success of, a new academic initiative.

The concentration outlined herein developed two specific problems in addition to those outlined above throughout the first year of implantation that require particular attention moving forward. First, the program is not sustainable financially on its own. At a minimum, buses are required for field site visits for one course along with costs of printing for student projects. Financial alignment for such a concentration will require small inputs (less than $3,000 USD) from either the university or outside sources. Second, the red tape needed to create community partnerships added a significant workload for the participating faculty. For example, a research permit was needed for site visits in one of the service-learning courses. This process took a long period of time and the final permit was received less than one week before the course started and the permit was needed. These types of stresses for faculty in addition to the added workload of a service-learning course make such endeavors difficult to prioritize.

However, Fitzgerald et al. (2012) made a four-point case for why service-learning classrooms are worth the additional hardships for faculty, the additional financial inputs needed, and/or the additional structure changes needed in the university setting. These reasons include: United States higher education system has a history rooted in service, community stakeholders feel more engaged with the university student body, the university has a role as a good neighbor with social responsibility, and, most importantly, there is a higher effectiveness that students achieve when learning both in and out of a classroom. As seen in the current study, students not only felt more a part of their community, but also learned valuable skills that cannot always be taught in the undergraduate classroom such as teamwork, independence, and communication.

CONCLUSION

Service-learning is a form of experiential education in which students engage in not only classroom material, but an application of the material to a real-world problem with a community partner outside of the university. This project included the creation of a four-course concentration within either an environmental science or environmental studies degree in service-learning. All the courses were included as either required or electives that counted towards existing majors so that students were not overburdened with extra courses to opt into the concentration. Fifty-five students were enrolled in concentration courses in the 2018/2019 academic school year at Suffolk and, according to thirty-two participants who completed both pre- and post-course surveys, students left the term feeling more confident in their communication and teamwork skills. Students also better understood their community's needs through their partnerships outside of the classroom and, overall, felt that they would take other service-learning courses should they have the opportunity. The creation of the concentration did lead to obstacles for the participating faculty members including additional time inputs, added stresses of administrative paperwork, and the need for a small financial input (less than $3,000) to continue all of the courses in the concentration.

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ACKNOWLEDGEMENTS

The authors thank the Campuses for Environmental Stewardship Program for the funding of this project.